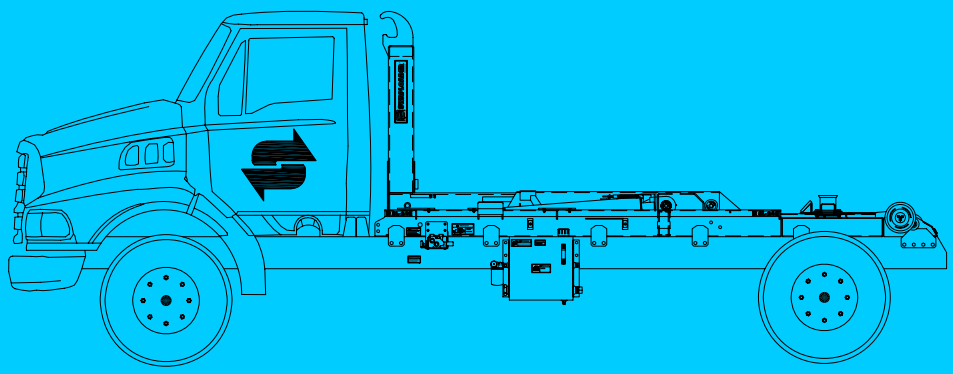
An EFCO Company

SWAPLOADER® U.S.A. LTD.

"HOOK ON QUALITY"

Model SL-240

Parts and Operations Manual



Hoist Serial Number: _____

PREDELIVERY CHECK LIST
SWAPLOADER MODEL SL-240 HOIST INSTALLATION

Conducted by: _____ **Date:** _____

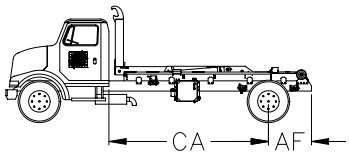
Dealer: _____

Customer: _____

I. COMPONENT INFORMATION

Hoist Serial No.: _____

Truck Chassis:
Identification No.: _____
GVW: _____
Distance from rear of cab to the Center Line of Rear Axle/Tandem (CA): _____
Distance From Center Line of Rear Axle/Tandem to Rear of Hoist (AF): _____



PTO:
Make: _____
Model: _____
Serial No.: _____
% of Engine RPM: _____

Hyd. Pump:
Make: _____
Model: _____
Serial No.: _____

II. INSTALLATION TO CHASSIS

Were there any problems installing the hoist to the truck chassis? _____ YES _____ NO

If yes, please describe _____

_____

_____

_____ All bolts checked for proper tightness.
_____ Please include photos of the hoist installed on the truck chassis. Be sure to include at least one photo from each side.

III. CONTROLS

_____ Controls easy to reach from driver's seat.
_____ Movement of controls correct per installation instructions.

PREDELIVERY CHECK LIST
SWAPLOADER MODEL SL-240 HOIST INSTALLATION

IV. HYDRAULICS INSTALLATION

_____ Correct hydraulic oil level in reservoir
_____ Check for leaks
Any abnormal noise during operation: _____ YES _____ NO
If yes, explain: _____

WITH ENGINE OPERATING @ 1000 RPM, RECORD THE FOLLOWING INFORMATION:

Cycle time for dump mode: Up _____ Sec. Down _____ Sec.
Cycle time for load/unload mode: Unload _____ Sec. Load _____ Sec.
Filter pressure _____ PSI.
Main pressure, controls in neutral _____ PSI.
Main relief pressure when extending jib cylinder (bottomed out)_____PSI.
Main relief pressure when extending lift cylinders (bottomed out)_____PSI.

NOTE: Connect pressure gauge to fitting provided on inlet section of Hyd. Control Valve (Ref. Pt. No. 10P37 fitting on Chassis-Tank Hyd. Circuit Drawing No. 90H97).

V. OPERATION

_____ Jib operates freely in both directions.
_____ Jib cannot be extended or retracted when raised in dump position or when pivot joint is tilted in unload position. Both safety hooks are fully engaged when jib is extended.
_____ Parts and operators manual in cab.
_____ Lubricate sliding jib and all grease zerks per installation instructions.

VI. DECALS

_____ All safety decals and product decals installed per Drawing 52H06.

ADDITIONAL COMMENTS:

_____

_____

_____

SEND COMPLETED FORM TO:

SWAPLOADER U.S.A., LTD.
1800 N.E. BROADWAY AVENUE
DES MOINES, IOWA 50313-2644

RETAIN ONE COPY FOR YOUR FILE.

SWAPLOADER U.S.A., LTD.
1800 N.E. BROADWAY AVENUE
DES MOINES, IA 50313

WARRANTY REGISTRATION CARD

Model_____ Serial No._____

MOUNTED ON VEHICLE:
Manufacturer _____
Model _____
Year _____
Wheel Base _____
Chassis Serial #_____
PTO Type _____
PTO Ratio _____

DISTRIBUTOR:
Name (print) _____
Address _____
City, State, Zip _____

The unit has been checked and serviced according to the Pre-delivery inspection report. The proper mechanical operation of the unit as described in the written operational instructions provided by SwapLoader U.S.A., Ltd. has been discussed with the customer.

_____ Date Installed_____
Customer Name (please print)

_____ Date Inspected_____
Address (please print)

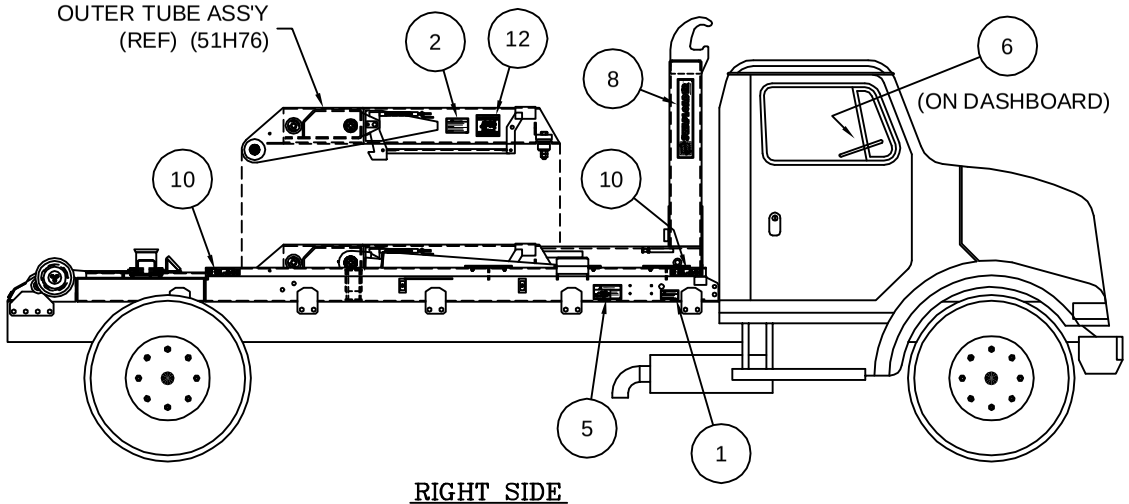
_____
City, State, Zip (please print)

_____
Customer Phone Number (required)

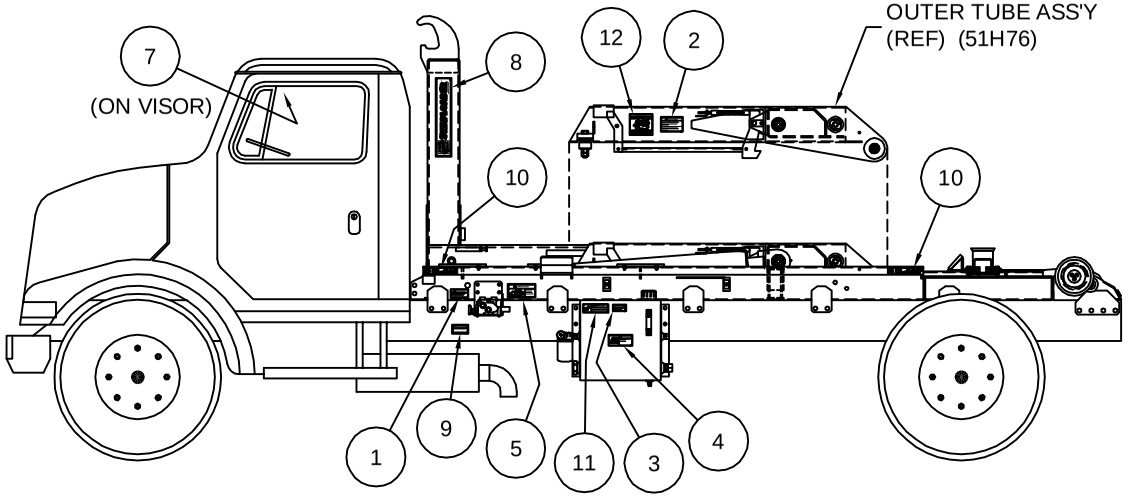
_____ _____
Customer Signature Distributor Signature

Type of Application SwapLoader hoist will be used in:

- ☐ Waste Industry
- ☐ Construction
- ☐ Recycling
- ☐ Landscaping
- ☐ Tree/Nursery
- ☐ Roofing
- ☐ Public Works
- ☐ General Construction
- ☐ Other_____



RIGHT SIDE



LEFT SIDE

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	2	90P07	OPR & SERV MANUAL		
2	2	90P08	HOIST-BODY SPEC		
3	ONE	90P09	HYD OIL SPEC		
4	ONE	90P10	HYD OIL FLAMMABLE		
5	2	90P11	HOIST FALLING		
6	ONE	90P12	LEVER CONTROL		
7	ONE	90P13	SAFETY INSTRUCTIONS		
8	2	90P14	SWAPLOADER - JIB		
9	ONE	90P18	RELIEF VALVE		
10	4	90P75	SL-240		
11	ONE	90P78	HIGH-PRESSURE FLUID		
12	2	91P06	LUBRICATION POINTS		
					TOTAL

SWAPLOADER™ U.S.A. LTD.

DECAL ASSEMBLY

SL-240

52H06 ~ REV B

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INTRODUCTION

SWAPLOADER U.S.A., LTD.

TO THE CUSTOMER

Your new SwapLoader Hoist was carefully designed and manufactured to give years of dependable service. To keep it operating efficiently, read the instructions in this manual thoroughly. It contains detailed descriptions and instructions for the efficient operation and maintenance of your SwapLoader. Each section is clearly identified so you can easily find the information that you need. Read the Table of Contents to learn where each section is located. All instructions are recommended procedures only.

Throughout this manual you will come across **"Dangers," "Warnings,"** or **"Cautions"** which will be carried out in bold type and preceded by the symbol as indicated to the left. Be certain to carefully read the message that follows to avoid the possibility of personal injury or machine damage.

Record your SwapLoader Hoist serial number in the appropriate space provided on the title page. Your SwapLoader dealer needs this information to give you prompt, efficient service when you order parts. It pays to rely on an authorized SwapLoader Distributor for your service needs. For the location of the Distributor nearest you, contact SwapLoader.

NOTE: It is SwapLoader's policy to constantly strive to improve SwapLoader products. The information, specifications, and illustrations in this publication are based on the information in effect at the time of approval for printing and publishing. SwapLoader therefore reserves the right to make changes in design and improvements whenever it is believed the efficiency of the unit will be improved without incurring any obligations to incorporate such improvements in any unit which has been shipped or is in service. It is recommended that users contact an authorized SwapLoader Distributor for the latest revisions.

SWAPLOADER, U.S.A., LTD.

1800 N.E. BROADWAY, DES MOINES, IOWA 50313

LIMITED WARRANTY STATEMENT

Effective September 1, 2009

SwapLoader U.S.A., Ltd., (SwapLoader), warrants to the original purchaser of any new SwapLoader product sold by an authorized SwapLoader distributor or service center, that such products are free of defects in material and workmanship. All SwapLoader products with an original factory invoice date of September 1, 2009 or later qualify for warranty as defined in this Limited Warranty Statement.

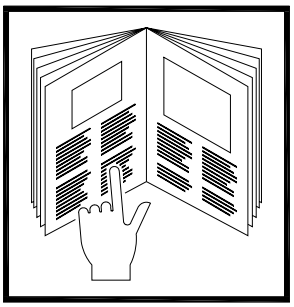
- Repair or replacement of parts on SwapLoader products are covered under warranty for forty-eight (48) months from date of Retail Sale by an authorized SwapLoader Distributor or service center, subject to any applicable federal, state or local taxes, and not to extend beyond sixty (60) months from the original factory invoice date. SwapLoader will, at its discretion, either repair the defective parts or replace them with equivalent parts, subject to the conditions below.
- Labor charges authorized by the SwapLoader Warranty Department are covered under warranty for a period of twelve (12) months from the date of Retail Sale by an authorized SwapLoader Distributor or service center, and not to extend beyond twenty-four (24) months labor from the original factory invoice date.
- Warranty Registration Card must be returned within 15 days of Retail Sale of SwapLoader hoist to SwapLoader, Des Moines, Iowa. If unit has not been registered, then the warranty start date will revert to the original factory invoice date. Warranty Registration is the ultimate responsibility of the owner and may be accomplished by the completion and return of the product registration form included in the SwapLoader hoist manual. If the owner is not sure that product registration is completed, then SwapLoader encourages them to contact us at 888-767-8000 to confirm.
- Defective parts must be reported to SwapLoader within 30 days of discovery on a SwapLoader warranty claim report form. A Return Goods Authorization (RGA) number must be issued to the claiming party prior to the return of any defective part to be considered for warranty.
- Warranty service must be performed by a distributor or service center authorized by SwapLoader to sell and/or service SwapLoader products, which will use only new or remanufactured parts or components furnished by SwapLoader U.S.A., Ltd. SwapLoader will invoice the distributor or authorized service center for the replacement parts and freight. Upon completion of the repair any defective parts to be returned for warranty consideration must be returned freight prepaid with a copy of the SwapLoader issued RGA form and a copy of the completed warranty claim report form. Upon evaluation of the returned parts, once warranty is approved, credit will be issued to the appropriate account for the approved warranty costs which may include parts, labor, and/or freight.
- The warranty covers only defective material and workmanship. It does not cover depreciation or damage caused by normal wear and tear, accident, mishap, untrained operators, or improper or unintended use. The owner has the obligation of performing routine care and maintenance duties as stated in SwapLoader's written instructions, recommendations, and specifications. Any damage resulting from owner/ operator failure to perform such duties shall void the coverage of this warranty. The cost of labor and supplies associated with routine maintenance will be paid by the owner.
- In no event will SwapLoader, the SwapLoader distributor or any company affiliated with SwapLoader be liable for business interruptions, costs of delay, or for any special, indirect, incidental or consequential costs or damages. Such costs may include, but are not limited to loss of time, loss of revenue, loss of use, wages, salaries, commissions, lodging, meals, towing, hydraulic fluid, travel, mileage, or any other incidental costs.
- SwapLoader is not responsible for the removal or replacement of accessories (fenders, toolbox, etc.).
- Warranty shall not apply if the equipment is operated at capacities in excess of factory recommendations.
- Warranty is expressly void if the seal on the main relief control valve has been broken.
- SwapLoader will ship the replacement part by the most economical, yet expedient means possible. Expedited freight delivery will be at the expense of the owner.
- Warranty is expressly void if serial number plate or stamping is tampered with.

IT IS EXPRESSLY UNDERSTOOD AND AGREED THAT THERE ARE NO WARRANTIES MADE BY THE MANUFACTURER OR ITS AGENTS, REPRESENTATIVES OR DISTRIBUTORS, EITHER EXPRESSED, IMPLIED, OR IMPLIED BY LAW, EXCEPT THOSE EXPRESSLY STATED ABOVE IN THIS STANDARD LIMITED WARRANTY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP. THE MANUFACTURER AND ITS AGENTS, REPRESENTATIVES AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

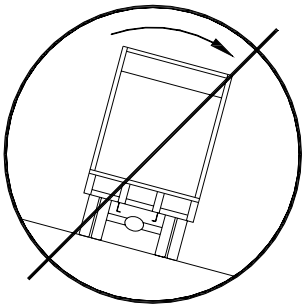
SWL Warranty 083109

SAFETY SUGGESTIONS

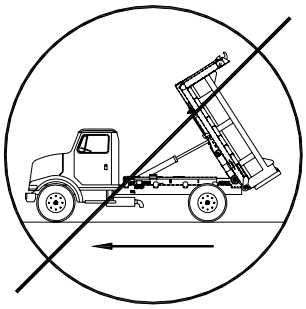
1. Do not operate or service this equipment until you have been properly trained and instructed in its use and have read the operation and service manual.

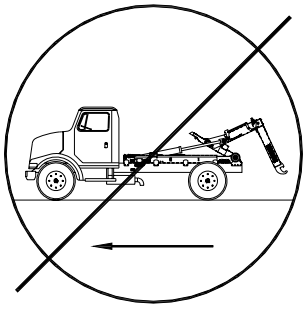


2. Do not operate this equipment on uneven ground.



3. Do not drive with the hoist in the dump position or with the hook to the rear.



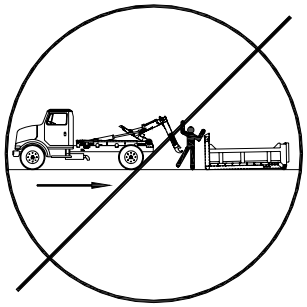


4. Do not exceed 1,500 Engine RPM when operating the Power Take Off (P.T.O.). Never leave the P.T.O. in gear while transporting.

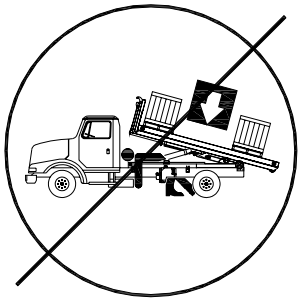
5. The hoist must be used with containers that properly fit the hook and rear holddowns. The container specifications must match the hoist specifications.

6. Keep the containers and hoist in good working order. **DO NOT** use if repairs are needed. Perform periodic inspections and maintenance as required by the maintenance section of the operator's manual.

7. Make sure work area is clear of people and obstacles prior to dumping or unloading containers. SwapLoader strongly recommends that a back up alarm be installed on the truck chassis. The operation of the hook hoist is that the truck is backed up to the body to pick it up and so there is a potential pinch point between the body and the hook.

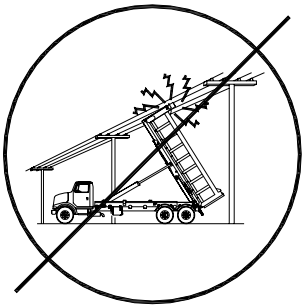


8. Any container, which is on the hoist, **MUST** be unloaded prior to performing any repairs or maintenance to the hoist. Also, **DO NOT** allow any person to work on or be under the hoist in a raised position without first installing adequate safety blocks to eliminate all possibility of the hoist accidentally lowering. SwapLoader strongly recommends that if possible the container should be dismounted from the hoist prior to performing any maintenance to the hoist.



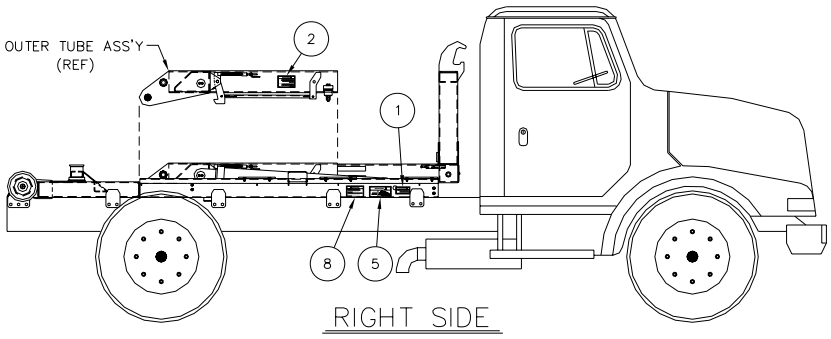
9. It is the responsibility of the owner and/or installer to insure that any additional safety devices required by state or local codes are installed on the SwapLoader Hoist and/or Truck Chassis.

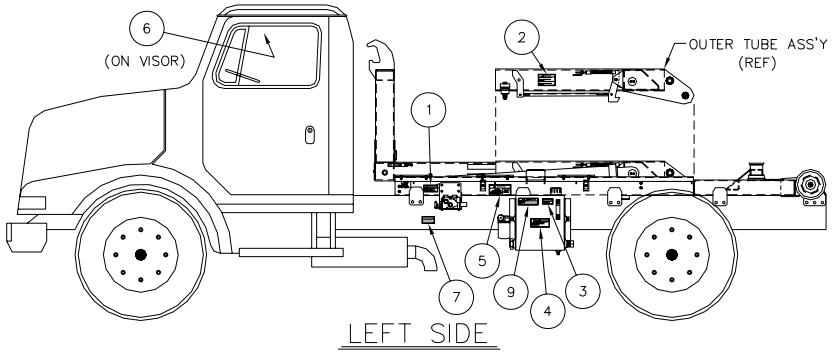
10. Keep away from overhead power lines. Serious injury or death can result from contact with electrical lines. Use care when operating hoist near electrical lines to avoid contact.



11. Avoid contact with high-pressure fluids. Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid hazardous conditions by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard, while protecting hands and body from the high-pressure fluids.

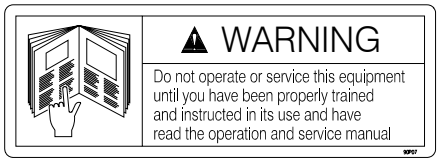
12. It is the responsibility of the owner to provide proper maintenance of the Safety Decals. Regular inspection and replacing of Safety Decals that have any fading or damage which would impair their function should be done (See the illustration on the following page for location of Safety Decals).

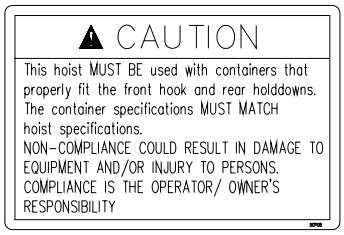
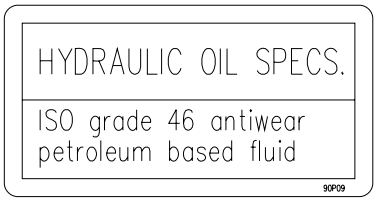
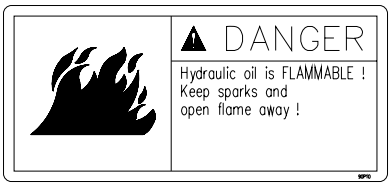
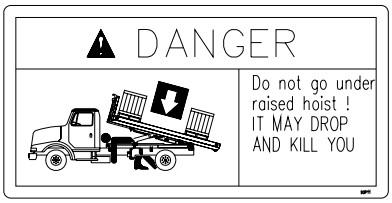
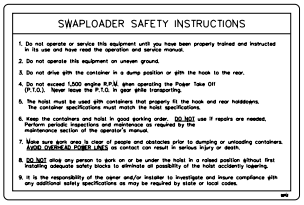
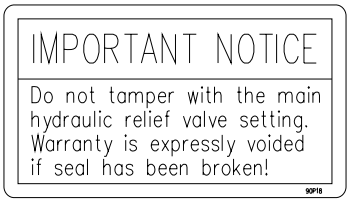


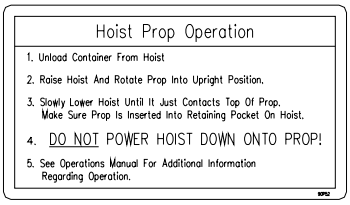
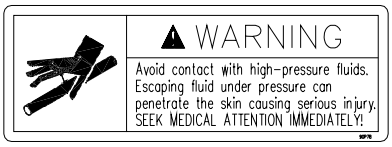


ITEM	QTY	P/N	DESCRIPTION
1	2	90P07	OPERATION & SERVICE MANUAL
2	2	90P08	HOIST-BODY SPECIFICATIONS
3	ONE	90P09	HYDRAULIC OIL SPECIFICATIONS
4	ONE	90P10	HYDRAULIC OIL FLAMMABLE
5	2	90P11	HOIST FALLING
6	ONE	90P13	SAFETY INSTRUCTIONS
7	ONE	90P18	RELIEF VALVE
8	ONE	90P52	PROP DECAL
9	ONE	90P78	HIGH-PRESSURE FLUID

The following is a list of all the Swaploader Safety Decals, and their part numbers. Please use when reordering replacement decals.

90P07 – OPERATIONS & SERVICE MANUAL	 ⚠ WARNING Do not operate or service this equipment until you have been properly trained and instructed in its use and have read the operation and service manual

90P08 – HOIST-BODY SPECIFICATIONS	
90P09 – HYDRAULIC OIL SPECIFICATIONS	
90P10 – HYDRAULIC OIL FLAMMABLE	
90P11 – HOIST FALLING	
90P13 – SWAPLOADER SAFETY INSTRUCTIONS	
90P18 – RELIEF VALVE	

90P52 – PROP DECAL (OPTIONAL)	
90P78 – HIGH-PRESSURE FLUID	

INSTALLATION

INITIAL INSPECTION

When the SwapLoader hoist is received from the factory, you should inspect the hoist for damage, which may have occurred in shipment. If damage has occurred, you should contact the shipper immediately. Be sure to note any damage or missing items on bill of Lading.

You should then check the hoist to insure you have received all the parts as indicated by the Packing List and the Ship Loose Box List.

If you have any problems, shortages, or questions, please contact SwapLoader U.S.A., Ltd. immediately.

GENERAL INSTALLATION PROCEDURE

The installation of the SwapLoader on a truck chassis will generally follow these steps:

1. Install hoist assembly onto truck chassis.

2. Mount the hydraulic control valve to the hoist and install the hydraulic plumbing from the control valve to the hydraulic cylinders. Then install the control levers in the cab and route the control cables (or air lines if you have air shift controls) to the hydraulic control value assembly.

3. Install the hydraulic tank, hydraulic filter, and hydraulic plumbing between the hydraulic tank and the control valve assembly.

4. Select and install the P.T.O. on the truck transmission. (Note: This can be done prior to hoist installation on the truck chassis.)

5. Install the hydraulic pump and the plumbing from the pump to the hydraulic tank and control valve assembly.

6. Fill the hydraulic tank with oil, bleed the air from the pump suction line, and start up the unit.

Although SwapLoader attempts to include the mounts and attaching fasteners with each hoist unit, your particular installation may require some additional mounts or modifications. If you have problems with your installation, please contact SwapLoader at 1-888-767-8000, as we may be aware of another customer who has installed a SwapLoader on a similar truck chassis.

HOIST INSTALLATION TO TRUCK CHASSIS

1. Place the SL-240 hoist assembly on the truck chassis. The truck chassis mounting surface should be flat without any steps or protrusions. If necessary shim bars need to be added to ensure a flat surface on which to support hoist. The truck chassis should meet the following minimum specifications (See Figures A & B):

   RBM for each frame channel: 900,000 in.-lb.
   Total RBM: 1,800,000 in.-lb.
   Minimum clear frame rail for mounting: 182" (See Fig. A&B)
   Front Axle Cap: 12,000 lb. (Min)
   Total Rear Axle Capacity: 20,000 lb. (Min)
   CA Dim: 130” to 144” (144” preferred)
   CT Dim: 120” to 132” (132” preferred)

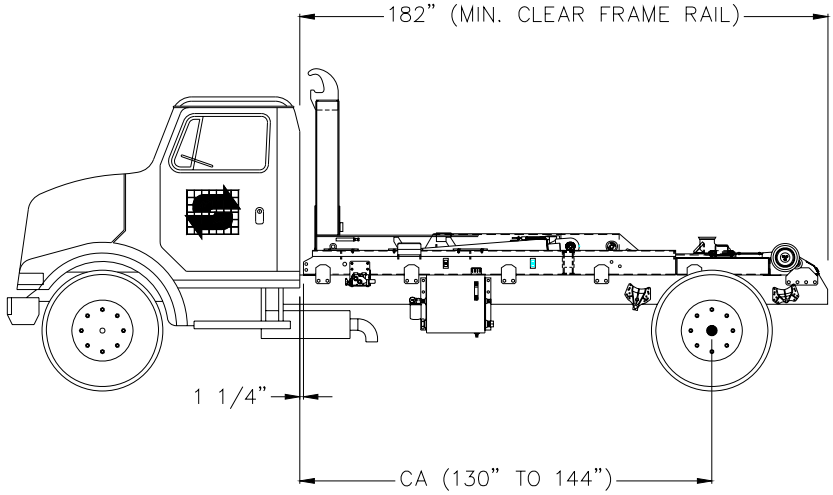


Figure A

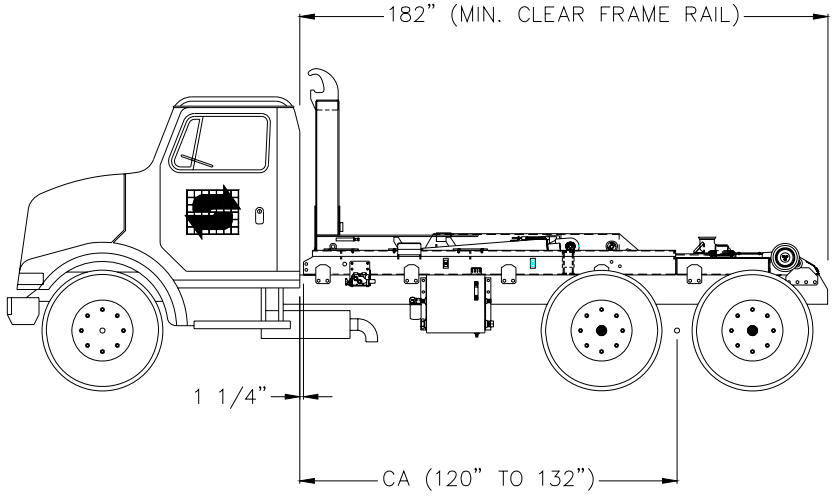


Figure B

Note: The above specifications are a minimum requirement. It is the responsibility

of the owner/operator to ensure the completed chassis meets or exceeds all federal, state, and local regulations. Also, the hoist should not be used to lift and haul any load that exceeds the load rating of any of the individual components of the completed chassis (tires, axles, suspension, etc.)

The clear frame dimension indicated in the picture above allows for the overall length of the hoist plus 5 inches for cab clearance and rear light bar mounting. Extra frame length may be needed to allow for mounting additional accessories (e.g. Cab Guard, Tarper, Light Kit, etc.). For example, when mounting a light kit on a truck with a long CA, check that the hoist and the light kit are positioned far enough back to eliminate any interference between the fender and the light kit. You should also consider the final weight distribution with regard to the bridge code when positioning the hoist.

2. There are two types of mount brackets used on the Model SL-240 hoist as indicated in Figure C or Drawing No. 52H34. They are the front mount brackets (Pt. No. 60H60), and the rear mount brackets (Pt. No. 60H61).

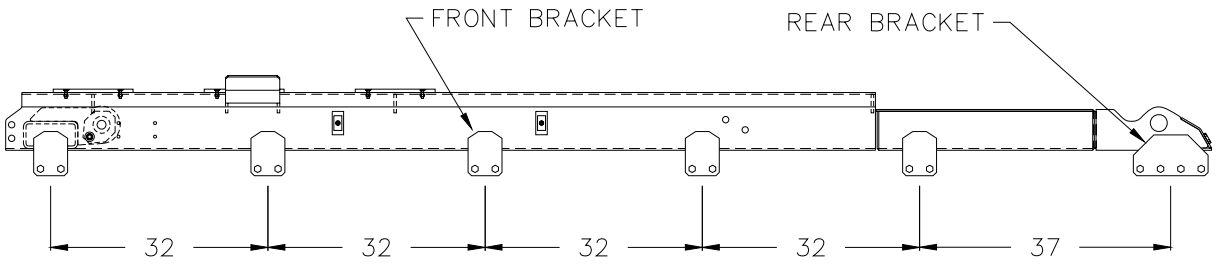


Figure C

Locate the mount brackets on the side of the hoist as indicated in Figure C. These dimensions are flexible because of possible interference with chassis components. Also allow for mounting the control valve assembly and the hydraulic tank. You should consult the truck chassis supplier for any limitations regarding drilling mount holes in the truck chassis frame rails. Typically, the holes must be at least 2 ¾" from the top of the truck chassis rails (Reference figure D & E).

Once the locations of the mount brackets have been determined, use the mount brackets as a template for marking the mounting holes in the truck chassis frame rails. Drill the 21/32 diameter holes required and attach the brackets to the truck chassis with the 5/8-inch diameter bolts, washers, and locking hex nuts provided. Torque to 220 ft.lbs.

3. Weld the mount brackets to the hoist mainframe as indicated on Figures D thru E. You may need to modify the mount brackets or add shim plates to allow for variances in the width of the truck chassis as well as to allow for top rivets, stepped channels, etc.

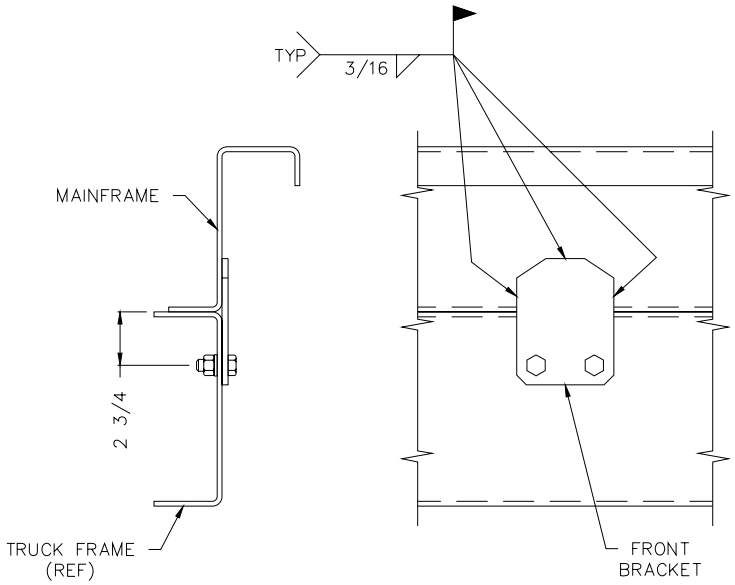


Figure D

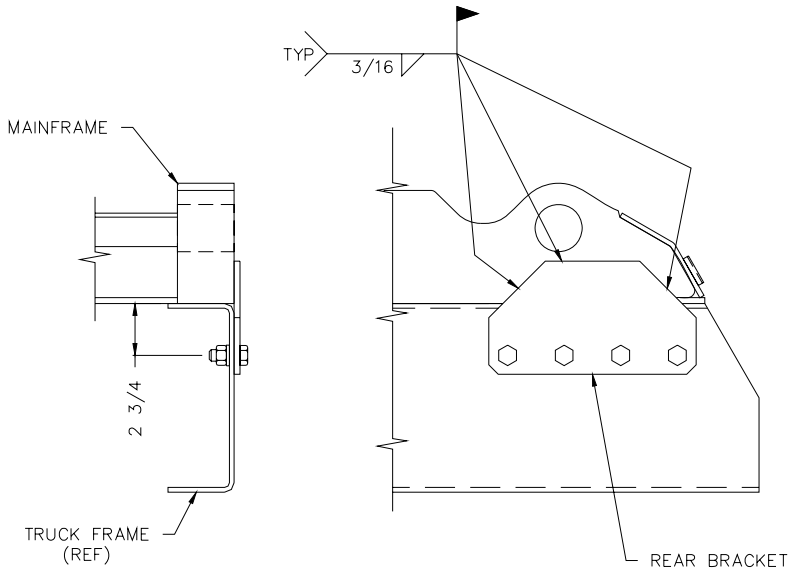


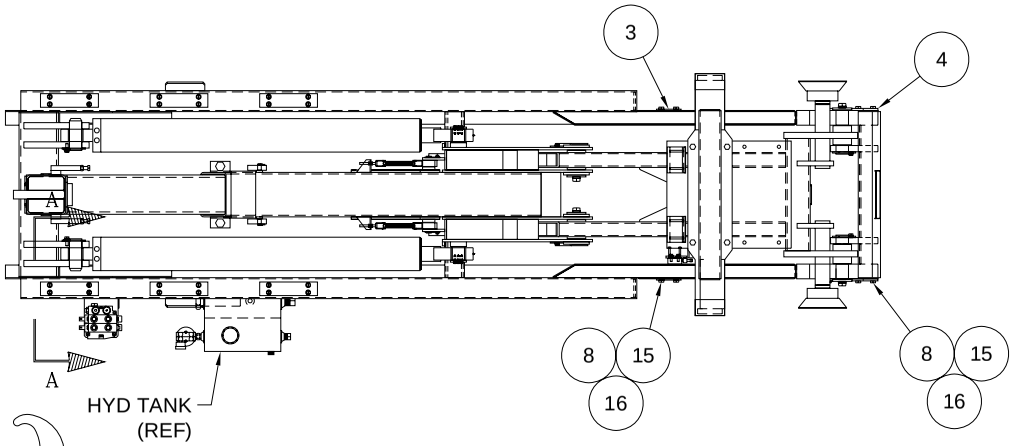
Figure E

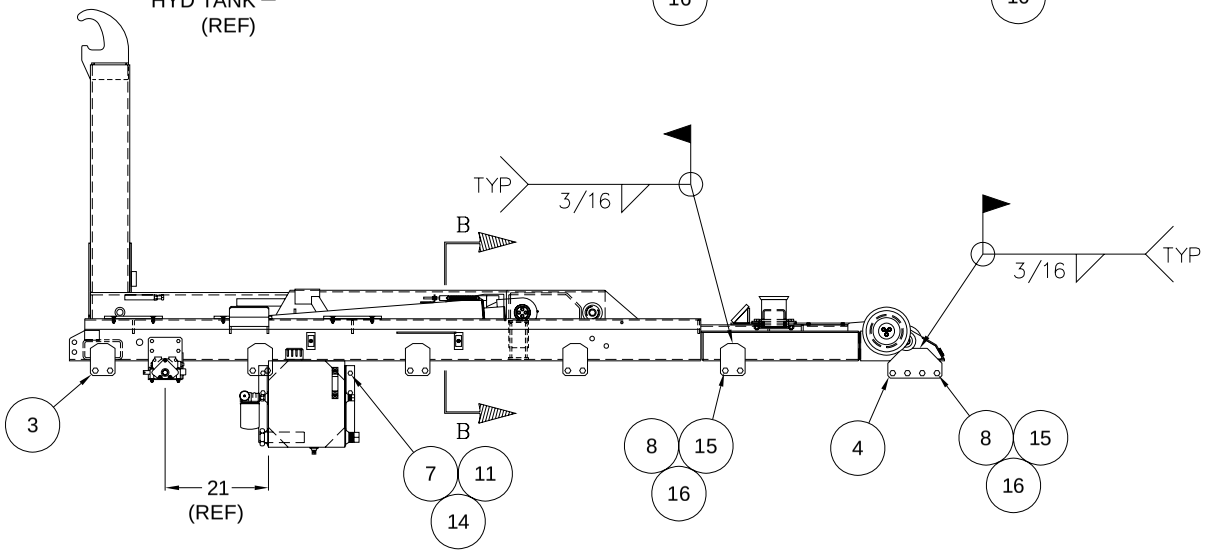
Note: Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be connected as close as possible to the part being welded to avoid the possibility of arching across bearings, gears, etc.

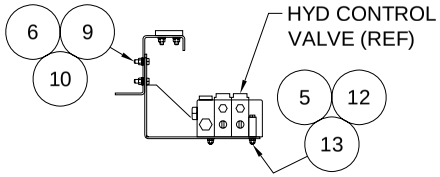
Note: The hoist mainframe is made from high strength low alloy steel. Use an appropriate welding process.

PARTS LIST

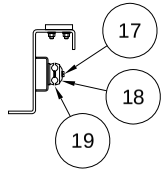
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	52H06	DECAL ASSEMBLY	–	NOT SHOWN
2	ONE	52H07	PARTS & OPERATIONS MANUAL	–	NOT SHOWN
3	10	60H60	FRONT BRACKET	2.67	
4	2	60H61	REAR BRACKET	4.91	
5	3	00752	5/16ø LOCK WASHER	0.01	
6	4	00755	3/8ø LOCK WASHER	0.01	
7	4	00784	1/2ø FLAT WASHER H.T.	0.02	F-436
8	28	00785	5/8ø FLAT WASHER H.T.	0.04	F-436
9	4	00P13	3/8-16 x 1 1/4 HHCS	0.06	GR-8
10	4	00P14	3/8-16 HEX NUT	0.02	GR-8
11	4	00P15	1/2-13 x 1 3/4 HHCS	0.15	GR-8
12	3	00P19	5/16-18 x 2 3/4 HHCS	0.06	GR-8
13	3	00P20	5/16-18 HEX NUT	0.01	GR-8
14	4	00P35	1/2-13 LOCKING HEX NUT	0.06	GR-C
15	28	00P55	5/8-11 LOCKING HEX NUT	0.11	GR-C
16	28	00P69	5/8-11 x 2 HHCS	0.27	GR-8
17	2	10P28	HEX BOLT 5/16ø x 1 1/4	0.03	HEX-T2
18	2	10P29	COVER PLATE	0.10	TCP-T2
19	2	10P66	CLAMP HALF ASSEMBLY	0.04	T2062
				50.14	TOTAL







SECTION A-A



SECTION B-B

SWAPLOADER U.S.A. LTD.

HOIST INSTALLATION KIT ASS'Y

SL-240

52H34

CONTROLS INSTALLATION - MANUAL

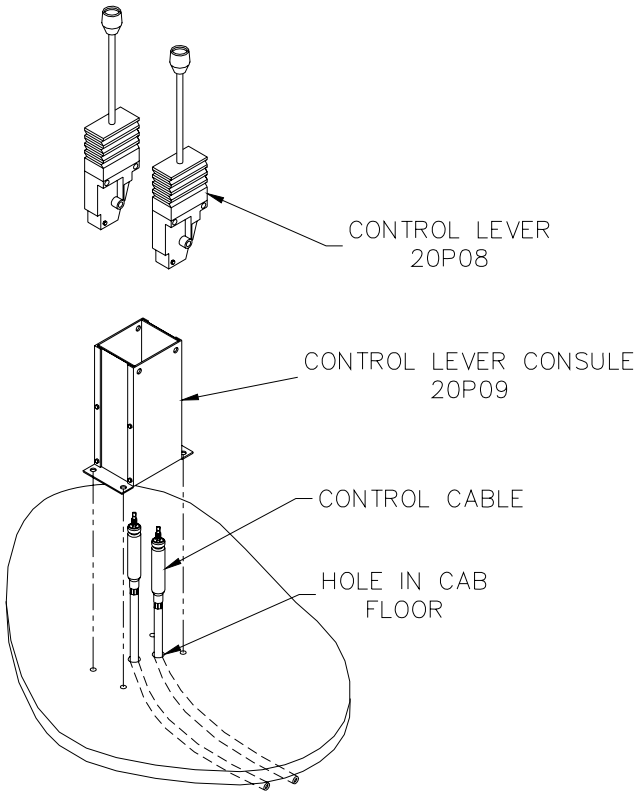
1. Attach the valve mount bracket (Pt. No. 10H51) to the mainframe as indicated on Dwg. No. 90H64 with the fasteners provided.

2. Mount the hydraulic control valve assembly (Pt. No. 20P39) to the valve mount bracket as shown on Drawing No. 90H64 with the fasteners provided.

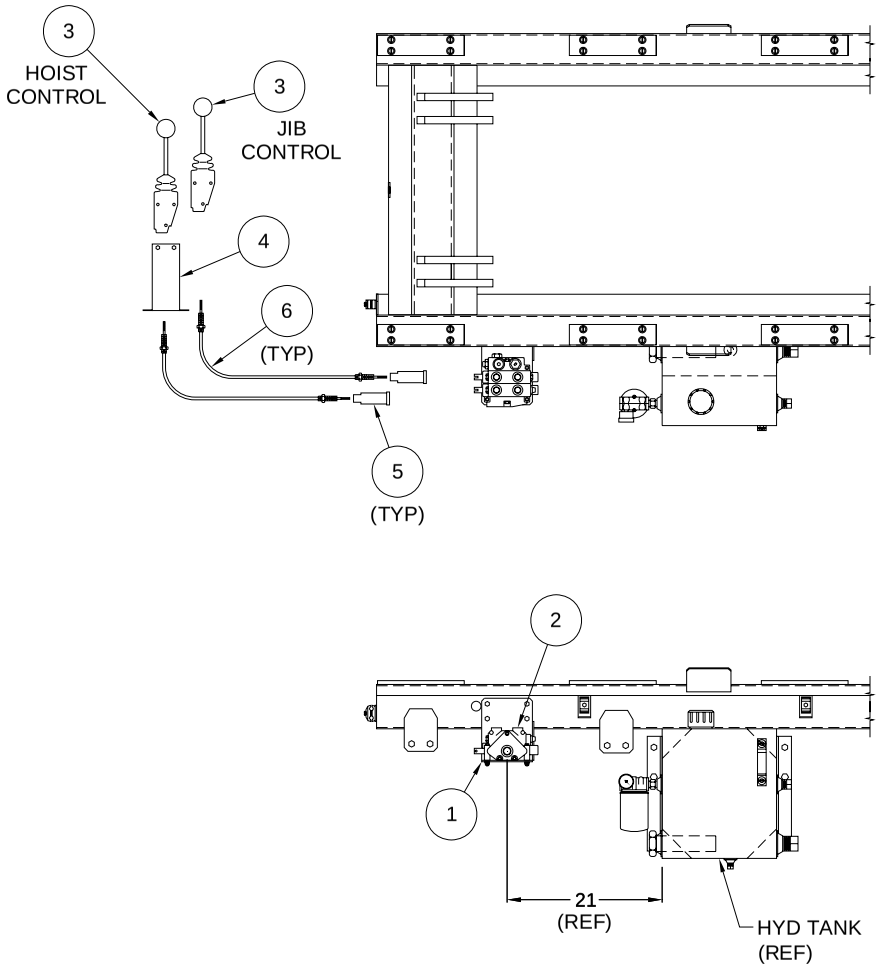
3. Install the hydraulic adapters and connect the hydraulic hoses and tubing (Pt. Nos. 10P73, 11P98, and 11P99) to the control valve assembly as indicated on Drawing No. 90H97. The tubing should be supported by the clamp assemblies that are provided in the Loose Parts Box (See Drawing 52H34).

4. Determine the best location in the cab for the control levers (Pt. No. 20P08). The location should be such that the controls can be easily reached while operating the truck. A control lever console (Pt. No. 20P09) is provided to facilitate the mounting of the control levers.

5. Assemble and install the control lever console (See diagram below). Typically the console is fastened to the floor of the cab and the control cables are routed through additional holes drilled in the floor. Your particular installation may require that additional brackets be fabricated or other modifications made.



PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	10H51	VALVE MOUNT BRACKET WDMT	8.24	
2	ONE	20P39	HYD VALVE ASS'Y	27.00	
3	2	20P08	REMOTE VALVE CONTROL HANDLE	2.80	
4	ONE	20P09	CONTROL HANDLE MOUNT CONSOLE	4.05	
5	2	20P10	BONNET CONNECTION KIT	0.50	
6	2	20P15	CONTROL CABLE 84" LG	1.75	
				49.39	TOTAL



NOTE:
A 2 SECTION CONTROL VALVE ASS'Y IS SHOWN. A 3 SECTION CONTROL VALVE ASS'Y IS REQUIRED WHEN A STABILIZER IS UTILIZED

SWAPLOADER U.S.A. LTD.

MANUAL CONTROL ASS'Y - 2 SECTION

SL-240/2418

90H64 ~ REV A

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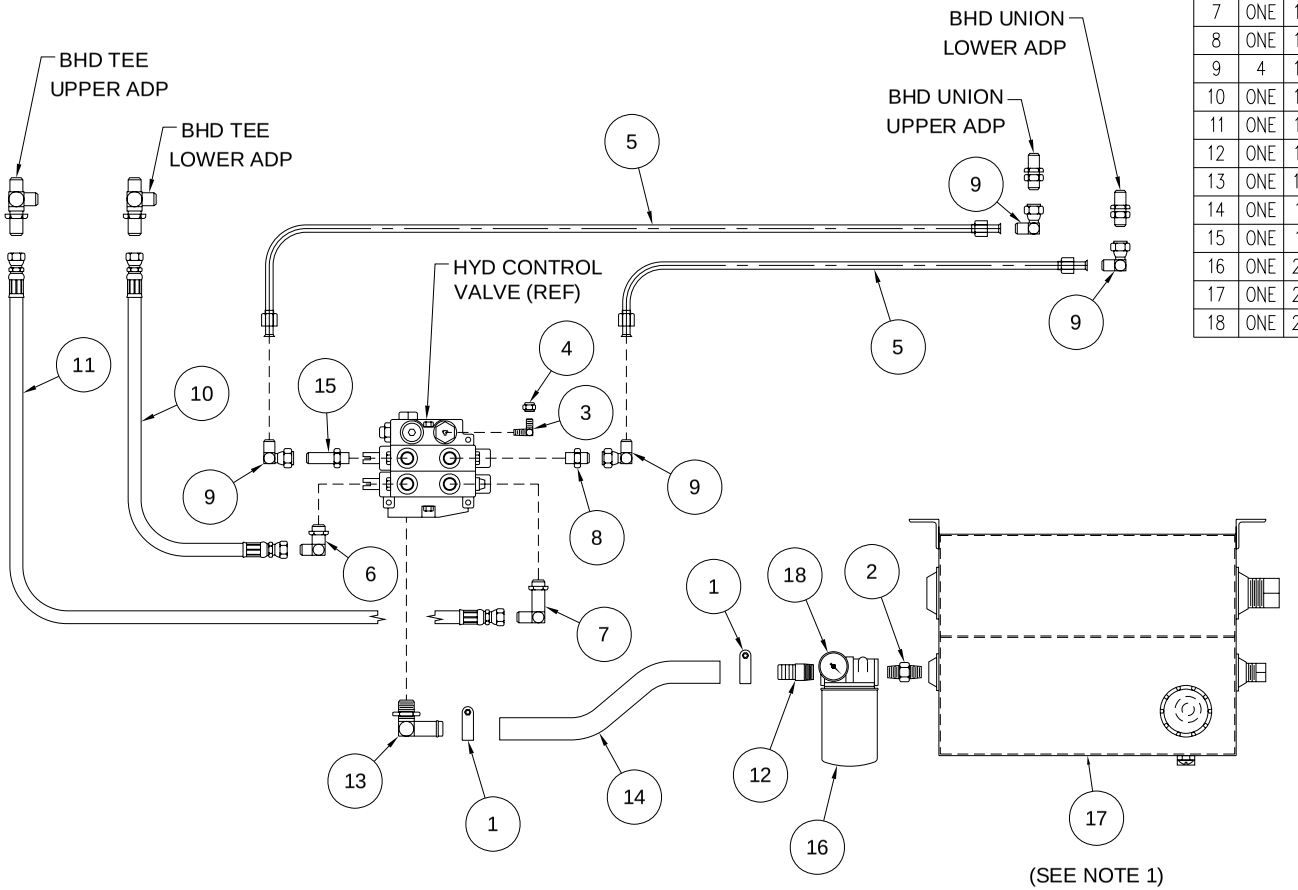


PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	2	10P21	T-BOLT CLAMP, 1 1/2ø	0.10	TBC-150
2	ONE	10P26	ADP, HYD MP / MP	0.70	5404-20-16
3	ONE	10P37	ADP, HYD MJIC / MP 90°	0.30	2501-4-4
4	ONE	10P38	ADP, HYD JIC CAP	0.10	304-C-4
5	2	10P73	HYD TUBING - REAR TO VALVE	3.62	
6	ONE	11P04	ADP, HYD MJIC / ORB 90°	0.40	6801-10
7	ONE	11P05	ADP, HYD MJIC / ORB LL 90°	0.40	6801-LL-10
8	ONE	11P06	ADP, HYD MJIC / ORB	0.40	6400-10
9	4	11P07	ADP, HYD MJIC / FMJIC SVL 90°	0.40	6500-10
10	ONE	11P98	HOSE ASS'Y 1/2 HP x 28	1.37	
11	ONE	11P99	HOSE ASS'Y 1/2 HP x 33	1.52	
12	ONE	12P19	ADP, HYD HOSE INS / MP	0.30	ST10
13	ONE	12P26	ADP, HYD HOSE INS / ORB 90°	0.60	4601-16-12
14	ONE	12P31	HOSE 1 LP x 30	1.65	
15	ONE	12P61	ADP, HYD MJIC / ORB L	0.40	6400-L-10
16	ONE	20P22	HYDRAULIC FILTER	2.30	
17	ONE	20P25	HYDRAULIC TANK - 25 GAL	63.00	SEE NOTE
18	ONE	20P64	INDICATOR GAUGE	0.01	
				78.87	TOTAL

NOTE:
HYD TANK ASS'Y CONSISTS OF:
TANK WELDMENT, TANK MOUNTED STRAINER,
SIGHT GAUGE, FILLER/BREATHER CAP,
MAGNETIC DRAIN PLUG, AND PORT PLUGS.

SWAPLOADER™ U.S.A. LTD.

HYD. SUB-ASS'Y - CHASSIS TANK CIRCUIT

SL-220/222/240

90H97

PT-90H97.dwg 08/20/09 10:30

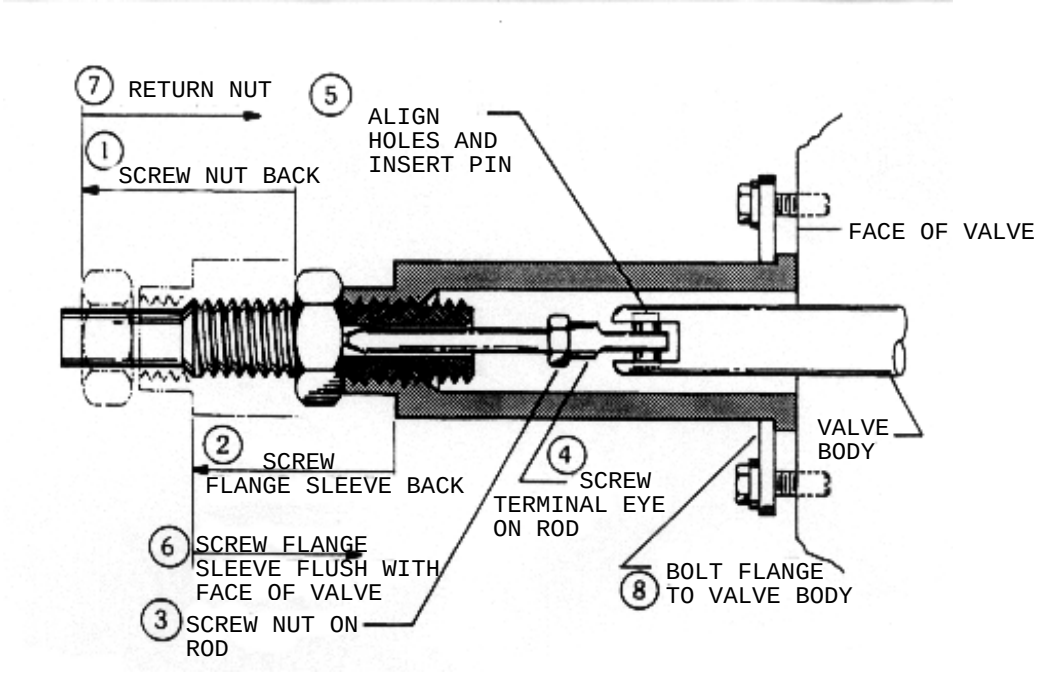
6. Attach the control cables to the control levers and route the cable through the holes in the cab. Install the control levers in the console. Levers should be installed such that when the levers are pushed forward the control cable is extended. See Drawing No. 90H64 (Manual Control Assembly) for control lever orientation.

7. Route the cables to the control valve location and attach them to the control valve with the bonnet connection kits provided (Pt. No. 20P10). See the following instruction sheet for installation procedures. The control cables supplied are 84 inches long. Your particular mounting may require different length control cables, which can be purchased locally or through Swaploader. Take proper care when routing the control cables, as a good cable path is essential for a proper operating system. Keep bends in the cable path to a minimum and be as generous as possible. Under no circumstances should any bend be tighter than an 8" radius. Protect the cable from heat above 225 degrees F. and avoid hot areas such as exhaust pipes, etc.. Protect the cable from physical damages such as pinching or crushing, and do not use cable supports, which may crush or deform the cable. Allow room for flexing where the cable is attached to moving parts of the equipment, so that the cable is neither kinked nor stretched.

INSTALLATION PROCEDURE FOR A HYDRAULIC CONTROL CABLE TO HYDRAULIC VALVE WITH BONNET CONNECTION KIT

1. Turn .750-16 UNF Jam Nut entire length of Threaded Hub back over the Cable. Place Flange onto Sleeve.
2. Turn Flange/Sleeve Assembly entire length of Threaded Hub back over the Cable.
3. Turn .250-28 UNF Jam Nut onto Threaded Rod until it bottoms.
4. Turn Terminal Eye onto Treaded Rod until it bottoms against Jam Nut. (Minor adjustments may be necessary to align Terminal Eye with spool yoke.)
5. Slide the Terminal Eye into yoke on spool and align the holes. Insert Clevis Pin through yoke and Terminal Eye holes. Install Retaining Ring into groove between Terminal Eye and one side of the Yoke.
6. Now, with the Cable attached to the valve and control head, turn the Flange/Sleeve Assemble back onto the Threaded Hub until it is flush with the valve face. When turning on the Flange/Sleeve Assembly, make sure that the control head remains in neutral.
7. Thread the .750-16 UNF Jam Nut back over Threaded Hub and tighten against the Sleeve to lock in position.
8. Bring Flange into position on bolt assembly to valve housing.

NOTE: FOR WORK SECTION NEXT TO INLET COVER, USE SPACER KIT.


7 RETURN NUT
5 ALIGN HOLES AND INSERT PIN
1 SCREW NUT BACK
FACE OF VALVE
VALVE BODY
2 SCREW FLANGE SLEEVE BACK
4 SCREW TERMINAL EYE ON ROD
6 SCREW FLANGE SLEEVE FLUSH WITH FACE OF VALVE
8 BOLT FLANGE TO VALVE BODY
3 SCREW NUT ON ROD

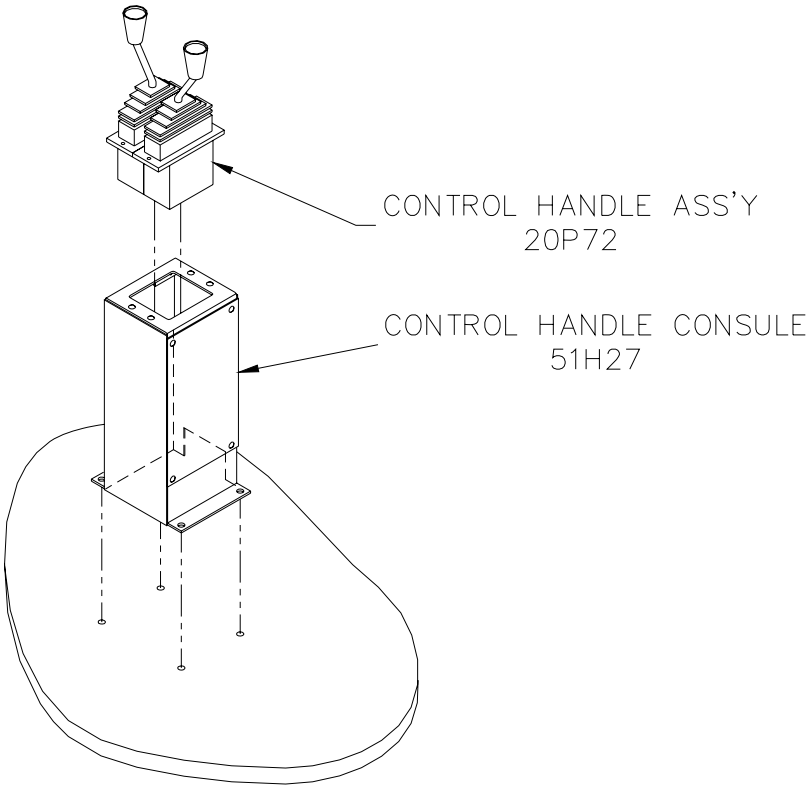
CONTROLS INSTALLATION - AIR SHIFT (OPTION)

1. Attach the valve mount bracket (Pt. No. 10H51) to the mainframe as indicated on Drawing No. 90H61 with the fasteners provided.

2. Mount the hydraulic control valve assembly (Pt. No. 20P39) to the valve mount bracket as shown on Drawing No. 90H61 with the fasteners provided. Attach airshift kits (Pt. No. 20P95) to the hydraulic control valve. Reference installation instruction included with the airshift kits.

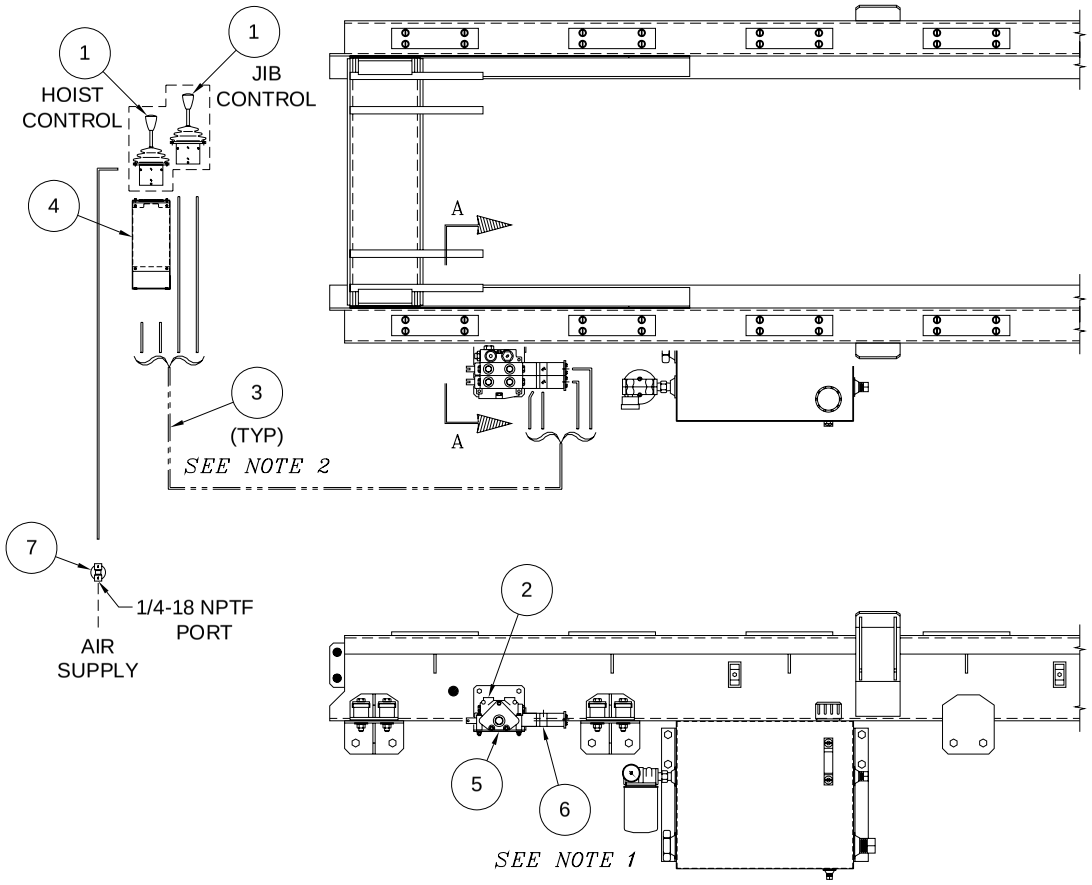
3. Install the hydraulic adapters and connect the hydraulic hoses and tubing (Pt. Nos. 10P73, 11P98, and 11P99) to the control valve assembly as indicated on Drawing No. 90H97. The tubing should be supported by the clamp assemblies that are provided in the Loose Parts Box (See Drawing 52H34).

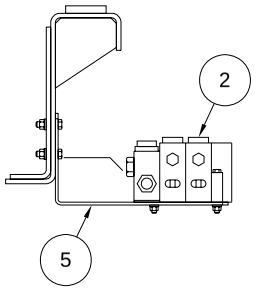
4. Determine the best location in the cab for the control handle assembly (Pt. No. 20P72). The location should be such that the controls can be easily reached while operating the truck. A control handle console (Pt. No. 51H27) is provided to facilitate the mounting of the control handles (See diagram below).



5. Install the air fittings and hose as shown on Drawing No. 90H60 (Air Circuit, Control Valve). An air pressure protection valve (Pt. No. 20P74) is provided so you can tap into the truck's air supply without jeopardizing the integrity of the air system. The air hose is provided in a bulk length, which you can cut to length as required for running the air lines. Take care in routing the air lines and avoid hot areas such as exhaust pipes, etc.

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	20P72	CONTROL HANDLE ASS'Y	1.60	
2	ONE	20P39	HYD CONTROL VALVE ASS'Y	27.00	
3	ONE	12P94	AIR LINE KIT	1.40	
4	ONE	51H27	AIR CONTROL CONSOLE ASS'Y	6.23	
5	ONE	10H51	VALVE MOUNT BRACKET	8.24	
6	2	20P95	HYD VALVE SECTION AIR SHIFT KIT	1.42	
7	ONE	20P74	AIR PRESSURE PROTECTION VALVE	0.59	WM778A
				47.90	TOTAL





SECTION A–A

NOTE:
1. 20P95 AIR SHIFT KIT TO BE INSTALLED ON HYD CONTROL VALVE BY HOIST INSTALLER. REFERENCE INSTALLATION INSTRUCTIONS INCLUDED WITH THE AIR SHIFT KIT.
2. SEE DRAWING 90H60 FOR AIR SHIFT KIT PLUMBING DIAGRAM.

SWAPLOADER U.S.A. LTD.

AIR CONTROL ASS'Y - 2 SECTION

SL-220/222/240/2418

90H61 ~ REV B

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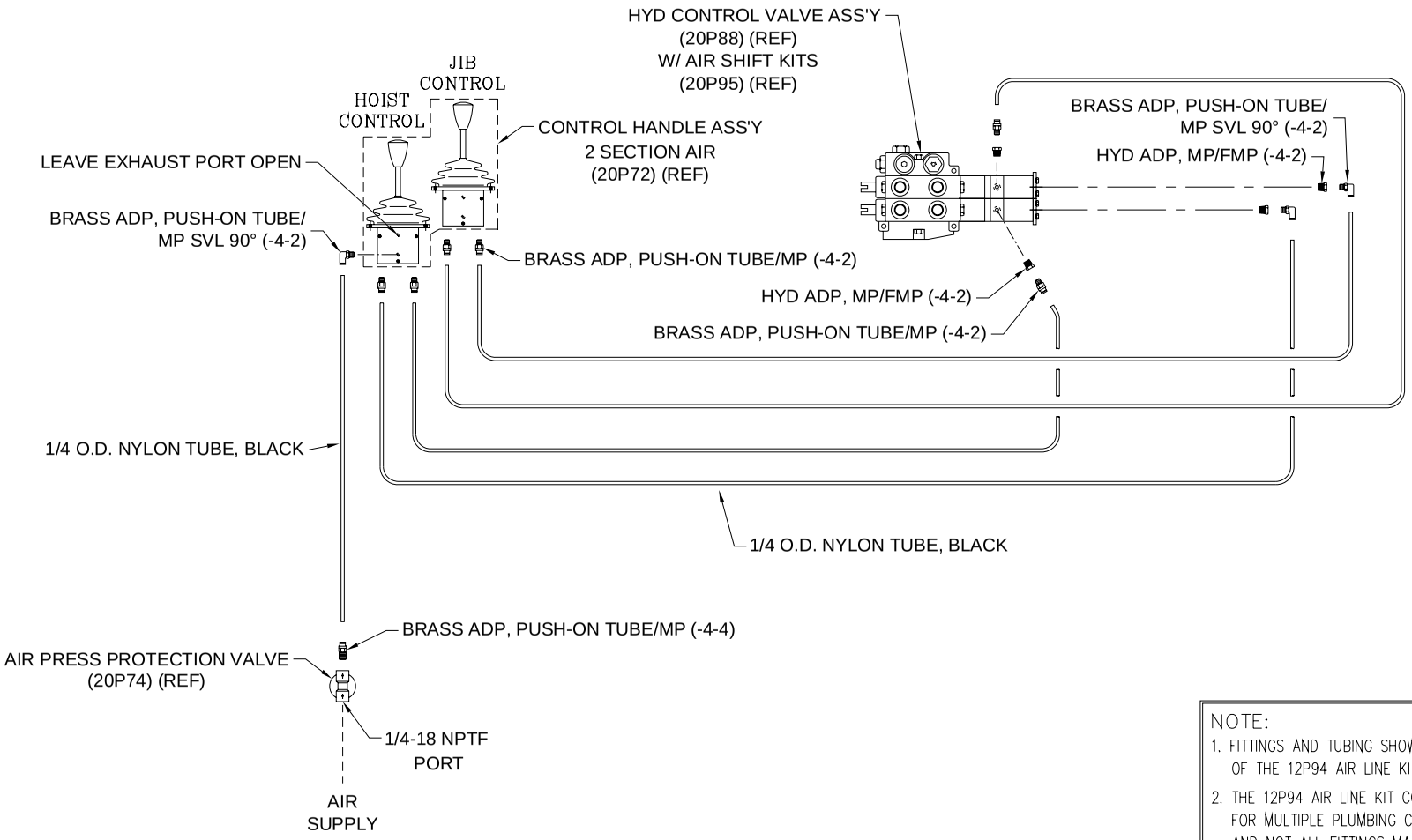

NOTE:
1. FITTINGS AND TUBING SHOWN ARE PART OF THE 12P94 AIR LINE KIT.
2. THE 12P94 AIR LINE KIT CONTAINS FITTINGS FOR MULTIPLE PLUMBING CONFIGURATIONS AND NOT ALL FITTINGS MAY BE UTILIZED.

SWAPLOADER™ U.S.A. LTD.

AIR CIRCUIT, CONTROL VALVE - 2 SECTION

SL-330/400/406

90H60 ~ REV A

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HYDRAULIC TANK INSTALLATION

1. Select a location to mount the hydraulic tank. Reference Figure F or Drawing No. 90H64 for the suggested location of the hydraulic tank to the rear of the control valve assembly on the left-hand side of the truck. The hydraulic hoses have been sized for the tank to be mounted in this general area. The tank can be located on the right-hand side or behind the cab, if necessary, which means longer hoses may be required.

2. Drill four (4) holes for 5/8-inch diameter bolts (provided) in the mount angle of the hydraulic tank (two per angle) and the frame rails of the truck chassis. Mount the hydraulic tank and install the hydraulic filter. Install the hydraulic return hose and the hose barb fitting between the filter and the control valve assembly as shown on Drawing No. 90H97. The hose length can be shortened if necessary. Secure the hose to the barb fittings with the hose clamps provided.

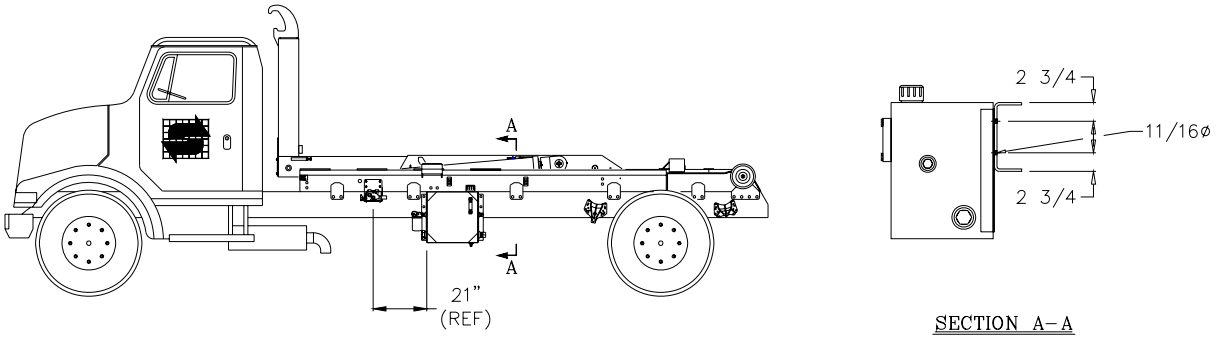


Figure F

P.T.O. SELECTION

The next step is to select and install a direct drive type P.T.O. to the transmission. Please contact your local truck equipment representative for the correct unit sized on the following criteria:

P.T.O. Torque Rating:	200 ft.-lbs. (See Note 1)
Power at 1500 RPM:	47 H.P. (See Note 1)
Output Flange:	SAE B 4 Bolt
Hydraulic Pump Spined Shaft Specifications:	7/8 – 13T 16/32 D.P.
Hydraulic Pump Rotation:	**L.H. As provided (See Note 2).** The hydraulic pump rotation can be reversed to R.H. by a qualified hydraulic technician or it can be sourced through Swaploader.
Ratio of Pump RPM to Engine RPM:	80% to 100%

NOTE 1: P.T.O. torque and power requirements are based on the unit operating at main relief pressure. Normal operating pressure will be less.

NOTE 2: P.T.O. output rotation will need to be R.H. (clockwise) as viewed looking at output flange of P.T.O. for a L.H. Pump.

NOTE 3: Do not operate pump at speeds over 1500 R.P.M.

NOTE 4: Always disengage the P.T.O. after each operating cycle.

HOW TO IDENTIFY WHAT PUMP IS NEEDED

The SwapLoader factory supplied pump is a bushing style gear pump, because of the pressure requirements of the SwapLoader hooklift hoist. By design the bushing style pumps are single rotation (rotation specific).

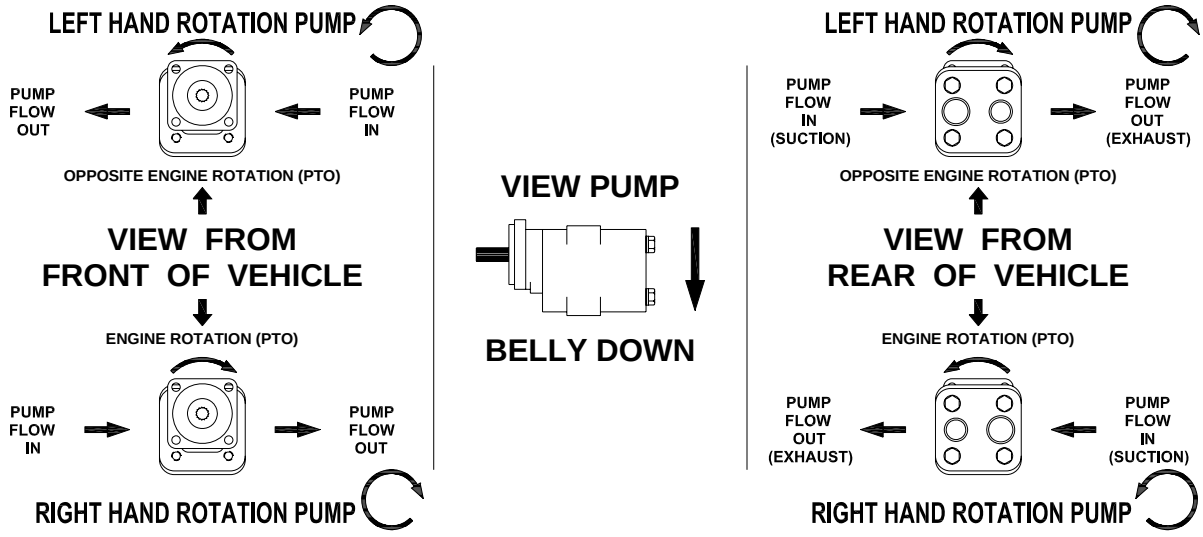
All SwapLoader hooklift hoists come standard with a CCW (left hand rotation pump), which will work for most manual transmission applications. For most automatic transmission applications a CW (right hand rotation pump) is needed; call SwapLoader for price and availability. **NOTE: Consult the PTO supplier whenever uncertain about the correct pump rotation for a particular application.**

The table below lists the SwapLoader part number for both left and right hand rotation pumps for the SL-240 hoist model:

MODEL	L.H. Rotation Pump (standard)	R.H. Rotation Pump (special)
SL-240	20P24	20P43

HOW TO IDENTIFY PUMP ROTATION

To better understand the effects of pump rotation we must consider the path that oil takes through the pump. Oil enters the pump through the inlet (suction) port, travels around the outside of the gears, and is forced out through the outlet (exhaust) port. Oil enters and exits the pump in the direction of its rotation.



Determine pump rotation by positioning the pump belly side down (see illustration above). Looking at the rear of the pump if the suction (largest) port is to the left side, then the pump is a CCW or left hand rotation. If the suction (largest) port is on the right side, then the pump is CW or right hand rotation.

PUMP INSTALLATION

1. Install the hydraulic pump to the P.T.O. (Bolts are not provided).

2. Install the hydraulic fittings into ports on the hydraulic pump as shown on Drawing No. 90H98.

3. Connect the suction hose assembly to the hydraulic tank (1 1/4" I.D. hose) and route to the hydraulic pump in as short and straight line as possible. Be sure to route the hose clear of exhaust components and of the drive shaft. Extra hose is provided so the hose can be shortened to an appropriate length. Install the hose on the hose barb fittings at the tank and at the pump and secure with the hose clamps provided.

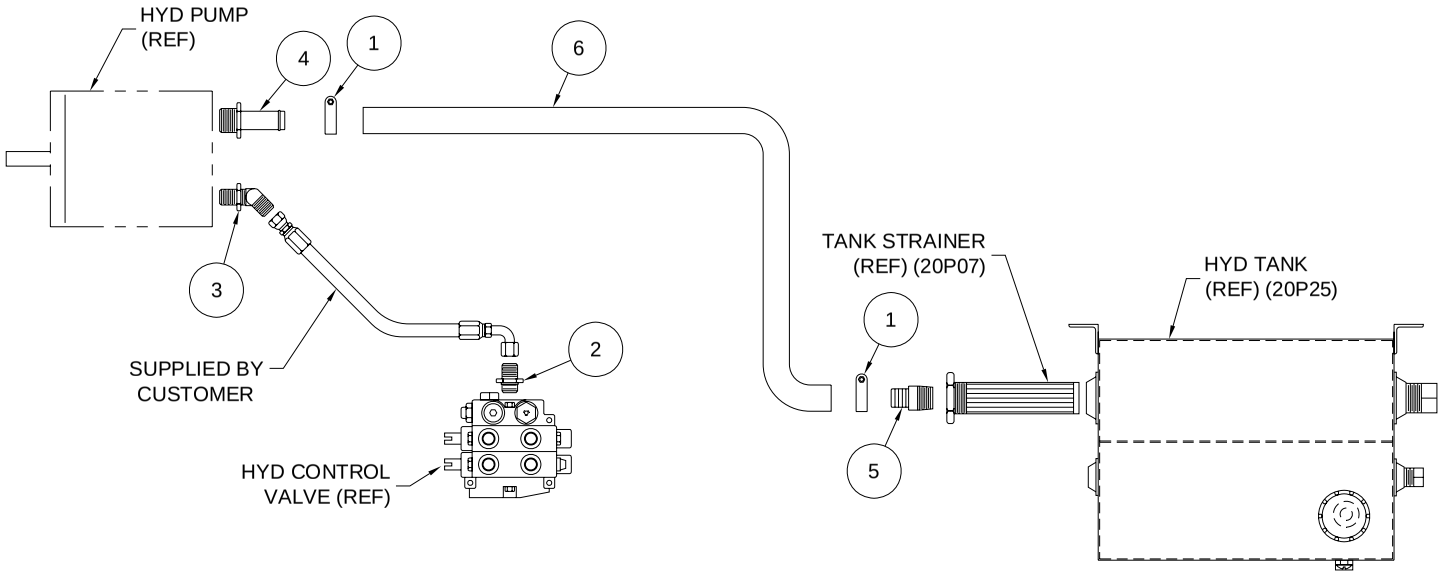
   NOTE: Prior to startup, this hose must be filled with oil.

4. The pressure hose from the hydraulic pump to the control valve assembly is not supplied with the hoist as it must be made to the proper length. This hose must be purchased from a local hydraulic hose assembly supplier per the following specification:

Hose I.D.:	3/4 inch
Working Pressure:	3000 PSI
Hose Fitting Threads:	SAE 37° (JIC) 1 1/16-12

5. Install the pressure hose as indicated. Tie up the pressure and suction hoses as necessary. Again, be sure the hoses are routed to avoid exhaust components and to stay clear of the drive shaft.

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	2	10P78	1 3/4ø T-BOLT CLAMP	0.15	TBC-175
2	ONE	10P90	ADP, HYD MJIC / ORB	0.40	6400-12
3	ONE	10P91	ADP, HYD MJIC / ORB 45°	0.50	6802-12-16
4	ONE	12P24	ADP, HYD HOSE INS / ORB	0.60	4604-20
5	ONE	12P25	ADP, HYD HOSE INS / MP	0.60	ST15
6	ONE	12P30	HOSE 1 1/4 LP x 148	9.74	
				12.14	TOTAL



NOTE:
DRIVER SIDE INSTALLATION OF HYDRAULIC TANK SHOWN. FOR SHORT WHEELBASE CHASSIS PLUMBING FOR HYDRAULIC TANK CAN BE ROUTED FOR PASSENGER SIDE INSTALLATION.

SWAPLOADER™ U.S.A. LTD.

HYD. SUB-ASS'Y - PUMP CIRCUIT

SL-220/222/240/2418

90H98

pt-90h98.dwg 08/27/09 15:29

START UP PROCEDURE

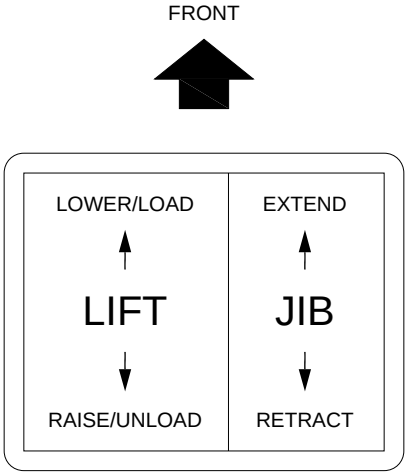
1. Fill the hydraulic tank with hydraulic oil (see oil specification in Maintenance Section.)

2. Prime the pump by loosening the clamp on the suction hose at the pump. Pull the hose back off the fitting till the air is bled from the line. Push the hose back on the fitting and retighten the clamp.

3. Engage the P.T.O. and run the pump at idle (700 to 900 RPM). Operate the cylinders at full stroke five to ten times to bleed the air from the lines and cylinders. The cylinders were filled with oil during testing at the factory, but some seepage may have occurred during shipping and installation. Refill the hydraulic tank, if needed, during this sequence and do not let the pump run without oil.

4. Check for leaks and tighten fittings as necessary.

5. Verify the movement of the control levers corresponds to the movement of the cylinders per the figure below.



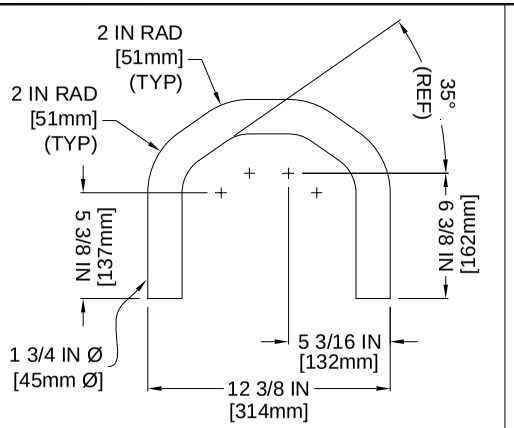
6. Install all safety decals and product decals per Drawing No. 52H06 after final installation and painting have been completed. The factory prior to shipment of a hoist, will install some decals that have a premask layer. The premask will need to be removed after painting the hoist. It is very important when removing the premask not to pull the premask out and away from the decal at a 90° angle, but instead pull the premask straight down at a 180° angle to the decal surface. Should problems occur with the premask pulling the decal loose, wet the tack side of the premask with water via a spray bottle to weaken the adhesive bond, while pulling straight down on the premask.

7. Fill out pre-delivery checklist and warranty card and mail to SwapLoader U.S.A., Ltd.

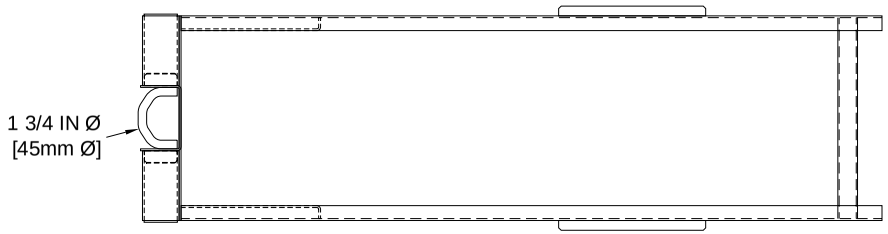
NOTE: Failure to fill out and return warranty card within 15 days of installation may possibly void the warranty.

CAUTION: The SwapLoader hoist must be used with bodies or containers that properly fit the front hook and the rear hold-downs (See figure S054). If possible, pick up one of the containers that will actually be used with the SwapLoader hoist and verify the following:

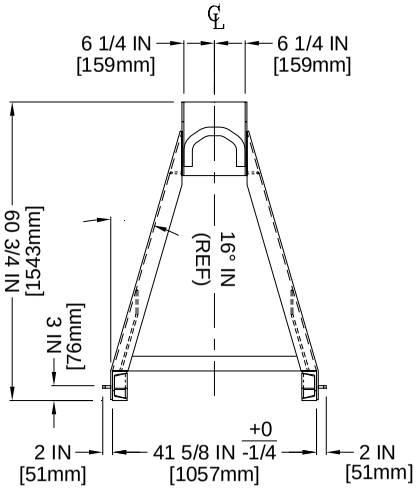
- **Outside dimensions of the long sills match the guiding rollers on the hoist.**
- **The front hook dimensions are correct for the hoist.**
- **The rear hold-downs of the container latch into the hold-downs on the hoist.**
- **Check for any interference between the container and any part of the hoist (i.e.: Hydraulic tank, hydraulic tubing or hose, hydraulic valve, etc.)**

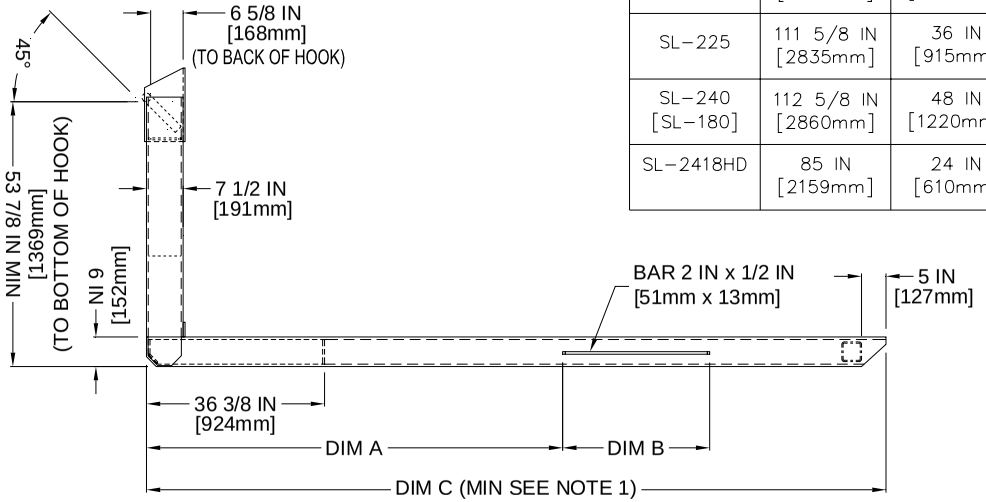


HOOK DETAIL



HOIST	DIM A	DIM B	DIM C
SL-205	123 5/8 IN [3140mm]	36 IN [915mm]	187 IN [4750mm]
SL-220	124 5/8 IN [3165mm]	48 IN [1220mm]	202 IN [5130mm]
SL-222	124 5/8 IN [3165mm]	48 IN [1220mm]	188 IN [4775mm]
SL-225	111 5/8 IN [2835mm]	36 IN [915mm]	163 IN [4140mm]
SL-240 [SL-180]	112 5/8 IN [2860mm]	48 IN [1220mm]	168 IN [4270mm]
SL-2418HD	85 IN [2159mm]	24 IN [610mm]	125 IN [3175mm]





NOTE:

THIS DRAWING PROVIDES THE CRITICAL SUBFRAME DIMENSIONS FOR COMPATIBILITY WITH THE SWAPLOADER HOOK LIFT HOIST. IT IS THE SUBFRAME SUPPLIER'S RESPONSIBILITY TO PROVIDE A SUBFRAME OF SUFFICIENT CAPACITY WHICH PROPERLY SUPPORTS THE BODY/CONTAINER WHEN USED WITH THE HOOK LIFT HOIST.

NOTE:
1. MIN LENGTH FOR JIB FULLY EXTENDED

SWAPLOADER™ U.S.A. LTD.

200 SERIES SUBFRAME DIMENSIONS

(53-7/8" HOOK HEIGHT)

S-054 ~ REV G

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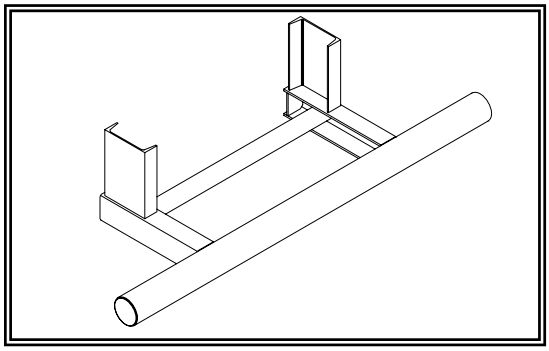
An EFCO Company

SWAPLOADER®

U.S.A. LTD.



REAR BUMPER ASSEMBLY

(52H11)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation.

2. Trim truck frame to indicated dimensions (See Fig. 1). These dimensions will facilitate the mounting of the rear light assembly if it is also being mounted.

3. Measure the distance from the bottom of the truck frame to the ground (NOTE: This should be performed on a level surface). Based this measurement and the dimensions in Fig. 1, the vertical channel [P/N: 63H94] may need to be modified in length to meet the Office of Motor Carrier Safety (OMCS) regulations. Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 2). Once the length has been determined for the vertical channels, weld them to the truck frame (See additional notes on next page).

4. Center the bumper weldment [P/N: 52H12] on the vertical channels [P/N: 63H94]. Position rear of bumper from rear of the hoist as indicated by the bumper location chart. This is crucial in order to ensure that the container longsills do not contact the bumper during the dump cycle (See Fig. 1 & 2).

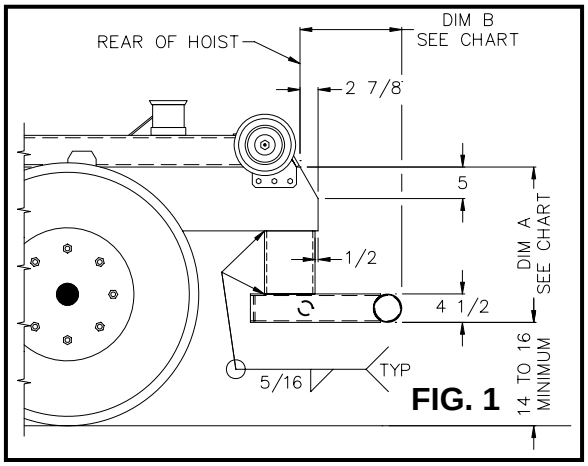


FIG. 1

BUMPER LOCATION CHART								
DIM. A	DIM B. (Max)							
	SL-105	SL-145	SL-180	SL-220/222 & SL-240	SL-2418	SL-330 & SL-400	SL-406 & SL-505/545	SL-650
24 5/8"	13 1/2	15 3/4	15 1/4	17	14 1/4	14	16 1/2	18
22 5/8"	12 1/4	14 1/2	14	15 3/4	13	12 3/4	15	
20 5/8"	11	13	12 3/4	14 1/4	11 3/4			
18 5/8"	9 3/4	11 3/4	11 1/2					

All Figures are for Illustration Purposes <u>Only</u>

10/05/09

REAR BUMPER ASSEMBLY
(52H11)

INSTALLATION INSTRUCTIONS (continued)

5. Weld the bumper weldment to the vertical channels (See Fig. 1 & 3).

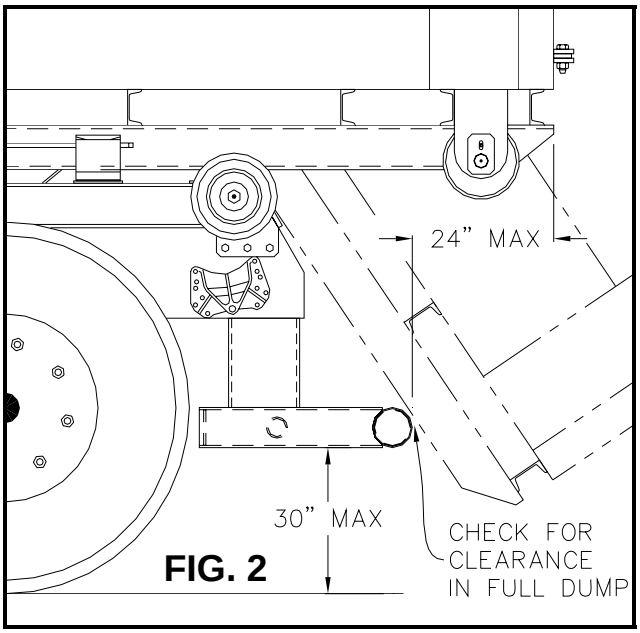


FIG. 2

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacture for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. All welds should be done utilizing a low hydrogen welding process.

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	52H12	REAR BUMPER WDMT	95.66
2	2	63H94	VERTICAL CHANNEL	9.58
			TOTAL	114.82

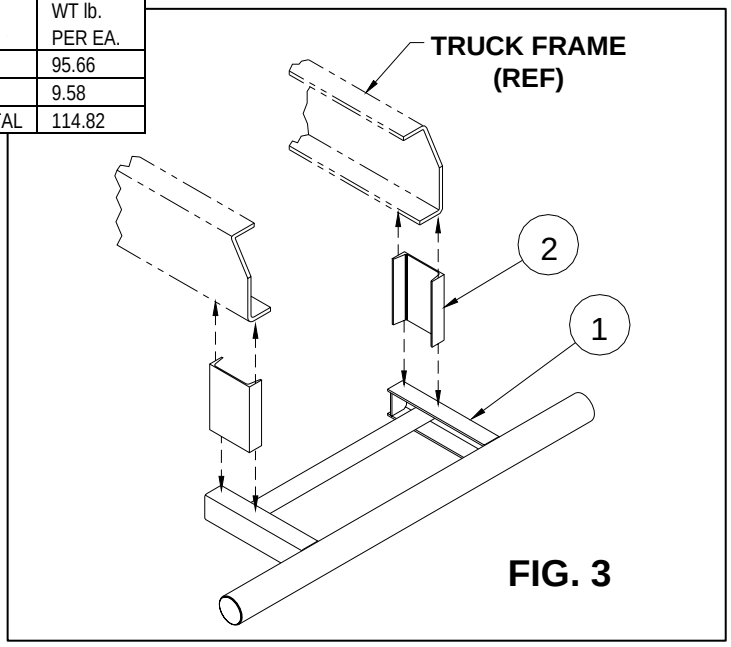


FIG. 3

1800 NE Broadway Avenue, Des Moines, Iowa, U.S.A. 50313-2644
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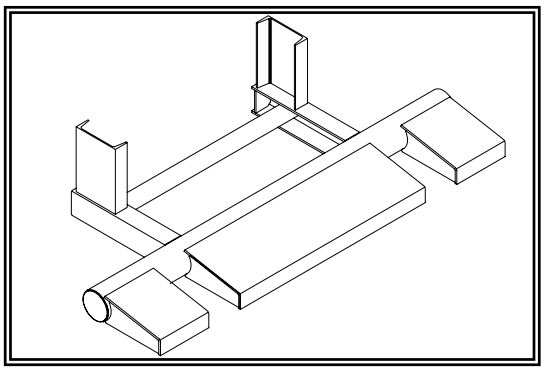

REAR BUMPER ASS'Y w/ EXTENSIONS

(52H11 with 52H13 Extensions)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation.

2. Trim truck frame to indicated dimensions (See Fig. 1). These dimensions will facilitate the mounting of the rear light assembly if it is also being mounted.

3. Measure the distance from the bottom of the truck frame to the ground (NOTE: This should be performed on a level surface). Based this measurement and the dimensions in Fig. 1, the vertical channel [P/N: 63H94] may need to be modified in length to meet the Office of Motor Carrier Safety (OMCS) regulations. Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 2). Once the length has been determined for the vertical channels, weld them to the truck frame (See additional notes on next page).

4. Center the bumper weldment [P/N: 52H12] with factory installed extensions [P/N: 52H13] on the vertical channels [P/N: 63H94]. Position rear of bumper from rear of the hoist as indicated by the bumper location chart. This is crucial in order to ensure that the container longsills do not contact the bumper during the dump cycle (See Fig. 1 & 2).

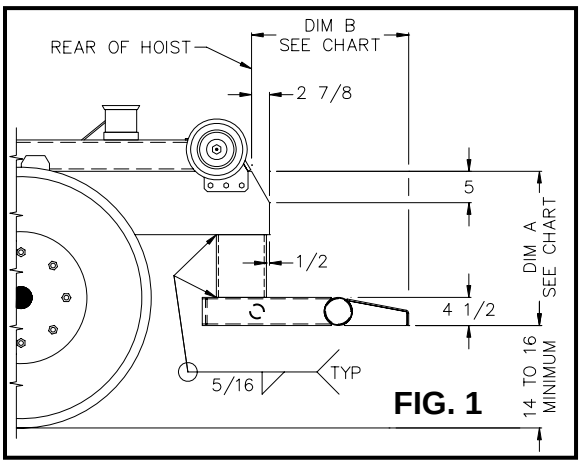

FIG. 1

BUMPER LOCATION CHART								
DIM. A	DIM B. (Max)							
	SL-105	SL-145	SL-180	SL-220/222 & SL-240	SL-2418	SL-330 & SL-400	SL-406 & SL-505/545	SL-650
24 5/8"	19 3/4	22 1/2	21 3/4	25 1/4	21 3/4	21 1/2 *	24 1/4 *	27
22 5/8"	18 1/2	21	20 1/2	23 3/4	20 1/2	20 *	22 3/4 *	
20 5/8"	17 1/4	19 1/2	19 1/4	22 1/4	19 1/4			
18 5/8"	16	18 1/4	18					

* Dimensions assume 6" tall longsills. For 8" tall longsills add 2 ¼" to the dimension shown.

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05OCT09

REAR BUMPER ASS'Y w/ EXTENSIONS

(52H11 with 52H13 Extensions)

INSTALLATION INSTRUCTIONS (continued)

5. Weld the bumper weldment to the vertical channels (See Fig. 1 & 3).

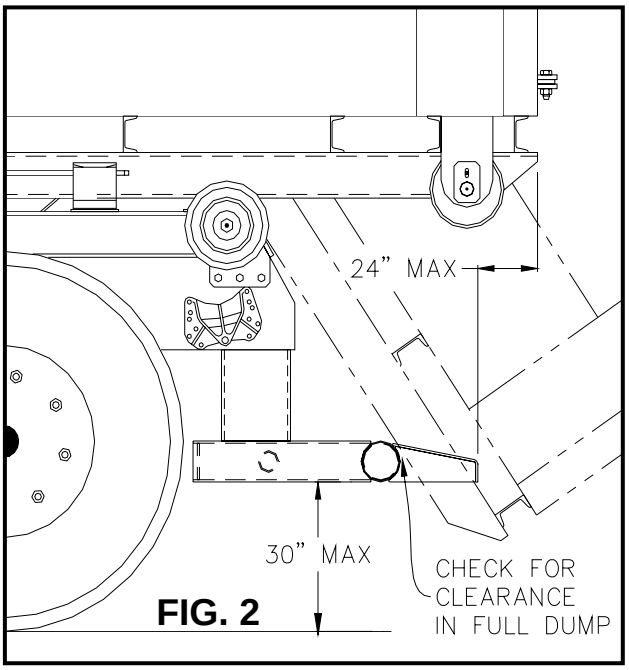

FIG. 2

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacture for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. All welds should be done utilizing a low hydrogen welding process.

MATERIAL LIST				
ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	52H12	REAR BUMPER WDMT	95.66
2	2	63H94	VERTICAL CHANNEL	9.58
3	1	52H13	REAR BUMPER EXTENSIONS	58.42
			TOTAL	173.24

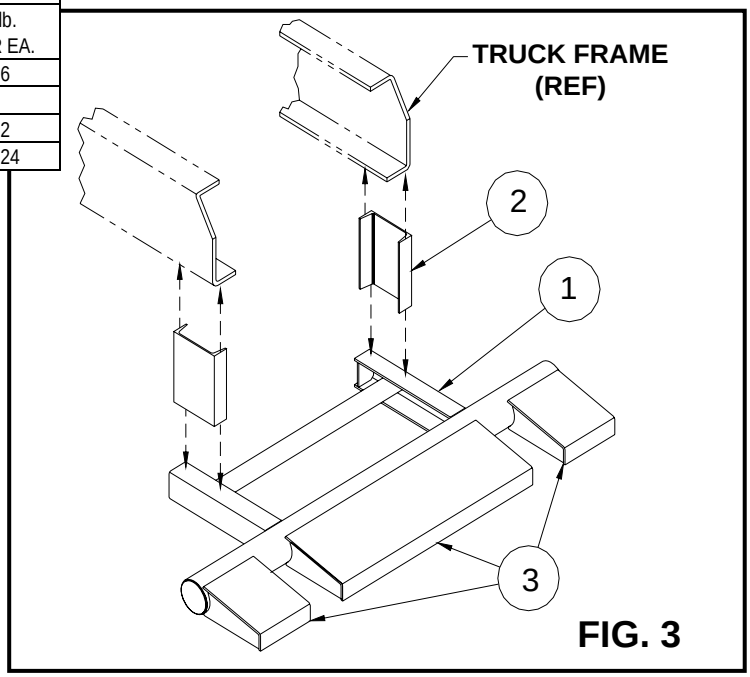

FIG. 3

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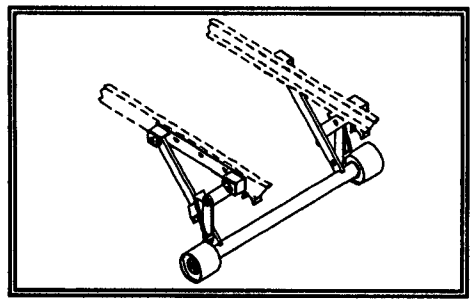

BUMPER ASSEMBLY, DROP DOWN
(51H11)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation. Typically, a drop down bumper is needed when the rear of the container extends beyond the back of the truck such that the distance between the truck bumper and container rear exceeds 24" (See Fig. 1).Office of Motor Carrier Safety (OMCS) Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 1).

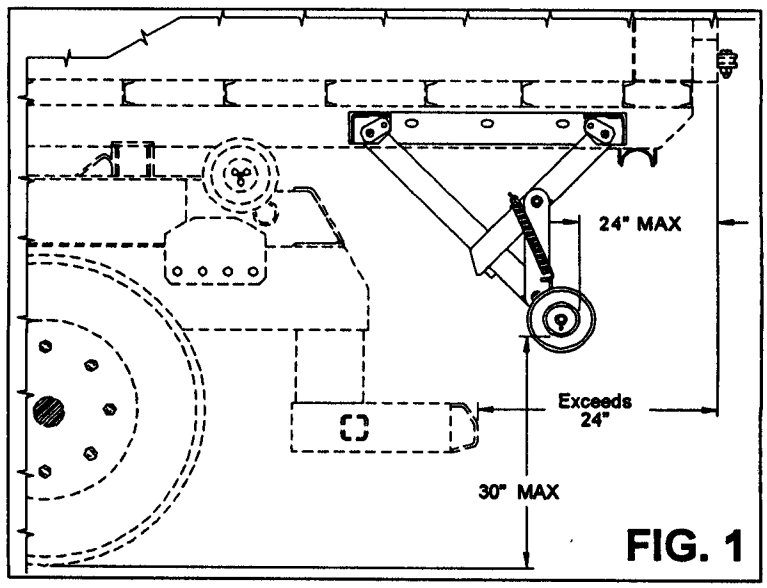

FIG. 1

BUMPER ASSEMBLY, DROP DOWN
(51H11)

INSTALLATION INSTRUCTIONS (continued)

2. Position drop down bumper on the longsills of the sub-frame (See Fig. 2 & 3). The mount brackets [Part No. 51H17] need to be positioned correctly to allow for sufficient room for bumper cradles [Part No. 51H19] (See Fig.2). Weld mount brackets onto the longsills of the sub-frame.

3. Position bumper cradles [Part No. 51H19] on the longsills of the sub-frame. Check bumper cradles for squareness with respect to each other. The bumper tube [Part No.51H16] should come to rest within the bumper cradles when the container rests on the ground (See Fig. 2 & 3). Weld bumper cradles into place on longsills.

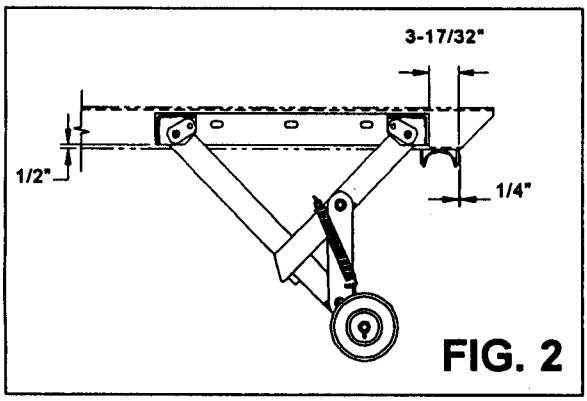

FIG. 2

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be connected as close as possible to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. During installation of the bumper, check to make sure that the position of the bumper does not interfere with the loading and unloading of truck bodies.

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	51H12	LONG PIVOT ARM R.H.	16.08
2	1	51H13	LONG PIVOT ARM L.H.	16.08
3	1	51H14	SHORT PIVOT ARM R.H.	8.89
4	1	51H15	SHORT PIVOT ARM L.H.	8.89
5	1	51H16	BUMPER TUBE	113.05
6	2	51H17	MOUNT BRACKET	19.94
7	4	51H18	BUMPER PIN	1.12
8	2	51H19	BUMPER CRADLE	1.64
9	2	51H20	BUMPER ROLLER	27.07
10	6	01P06	3/4-10 SLOTTED HEX NUT	.22
11	6	00786	3/4 DIA. FLAT WASHER HT	.10
12	6	00P98	5/32 DIA. X 1-1/2 COTTER PIN	.01
13	4	00P03	3/8-16 X 3/4 HHCS	.11
14	4	00755	3/8 DIA. LOCK WASHER	.05
15	10	90P20	1/4-28 GREASE ZERK	.01
16	2	90P33	1-1/8 OD X 10 SPRING	.60
			TOTAL	268.69

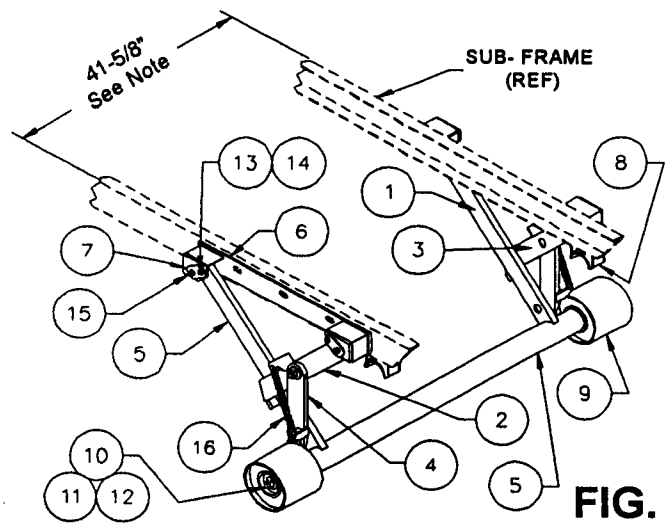

FIG. 3

Note: If width of the Longsills is under 41-5/8", add shims under the 51H17 brackets to get the dimension.

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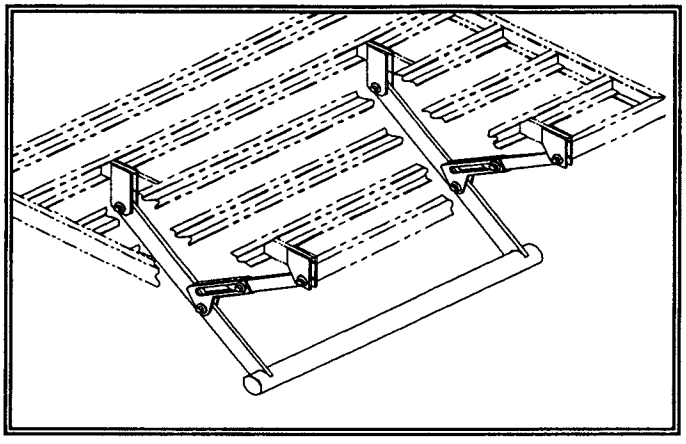


FOLDING BUMPER
(51H44)

FOLDING BUMPER
(51H44)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting bumper installation. Typically, a folding bumper is needed when the rear of the container extends beyond the back of the truck such that the distance between the truck bumper and container rear exceeds 24" (See Fig. 1). Office of Motor Carrier Safety (OMCS) Regulation 393.86 requires that no bumper be located more than 30" off the ground when the truck is empty, and the end of the bumper should not be located more than 24" from the extreme rear of the vehicle, including truck bodies (See Fig. 1). The folding bumper will need to be used in conjunction with the Roller Assembly [10H90] and Roller Mount Brackets Assembly [10H91] for the container to function properly.

2. Locate the best position for the support bars between the cross members. Fabricate four support bars out of 4" x 1" bar cut to the length needed to fit between the cross members (See Fig. 3). Figure 3 shows a width dimension of 56-1/2". This width can be adjusted if interference occurs with other items on the container, but cannot exceed the width of the bumper tube. Weld the four bars between the cross members.

3. Weld the front [62H87] and rear [62H88] brackets to the support bars. Be sure to maintain the dimensions as indicated so that the bumper folds properly (See Fig. 2 & 3).

4. Weld the Pivot arms [62H84] to the Bumper Tube Weldment [51H46]. Be sure to maintain the width dimension that was used to locate the support bars in Step 2.

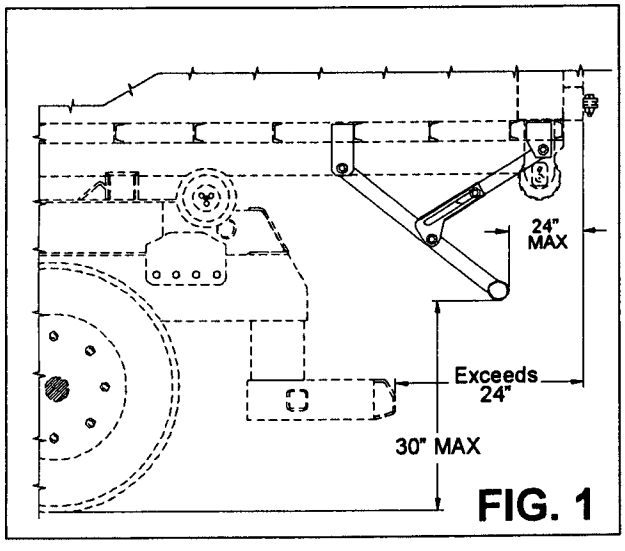


FIG. 1

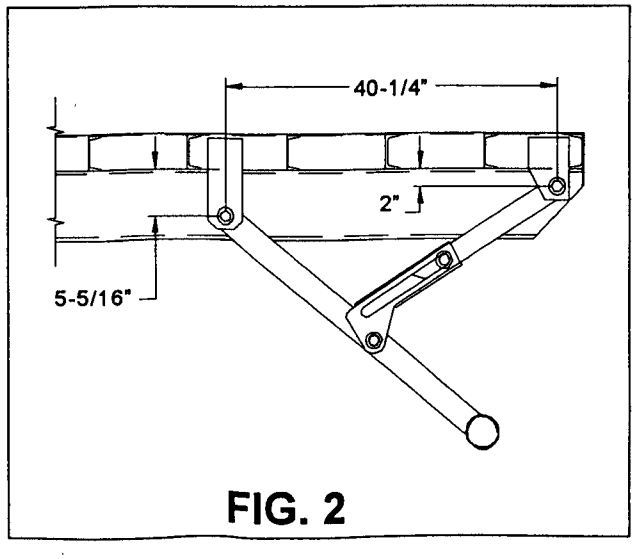


FIG. 2

5. Assemble the Bumper Assembly to the Front and Rear Brackets (See Fig. 3). Refer to the Typical Bolted Connection (See Fig. 4) for all connections.

6. Raise the bumper into the folded position several times to ensure the mechanism works smoothly and freely.

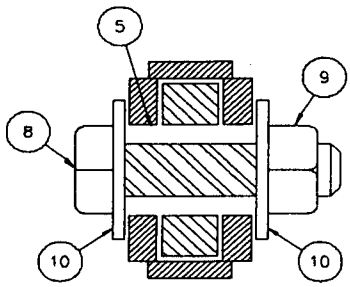
MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	2	51H45	SLIP BRACKET WDMT.	9.17
2	1	51H46	BUMPER TUBE WDMT.	47.83
3	2	62H84	PIVOT ARM	24.79
4	2	62H85	SLIDE ARM	10.67
5	8	62H86	BUSHING	.39
6	4	62H87	FRONT BRACKET	4.45
7	4	62H88	REAR BRACKET	3.16
8	8	01P15	3/4-10 X 3 HHCS GR-8	.56
9	8	00P72	3/4-10 LOCKING HEX NUT	.20
10	16	00774	3/4 DIA. FLAT WASHER	.05
			TOTAL	177.53

ADDITIONAL NOTES:

1. Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must disconnected and the ground lead from the welder should be connected as close as possible to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

2. During installation of the bumper, check to make sure that the position of the bumper does not interfere with the loading and unloading of truck bodies.



TYPICAL BOLTED CONNECTION

FIG. 4

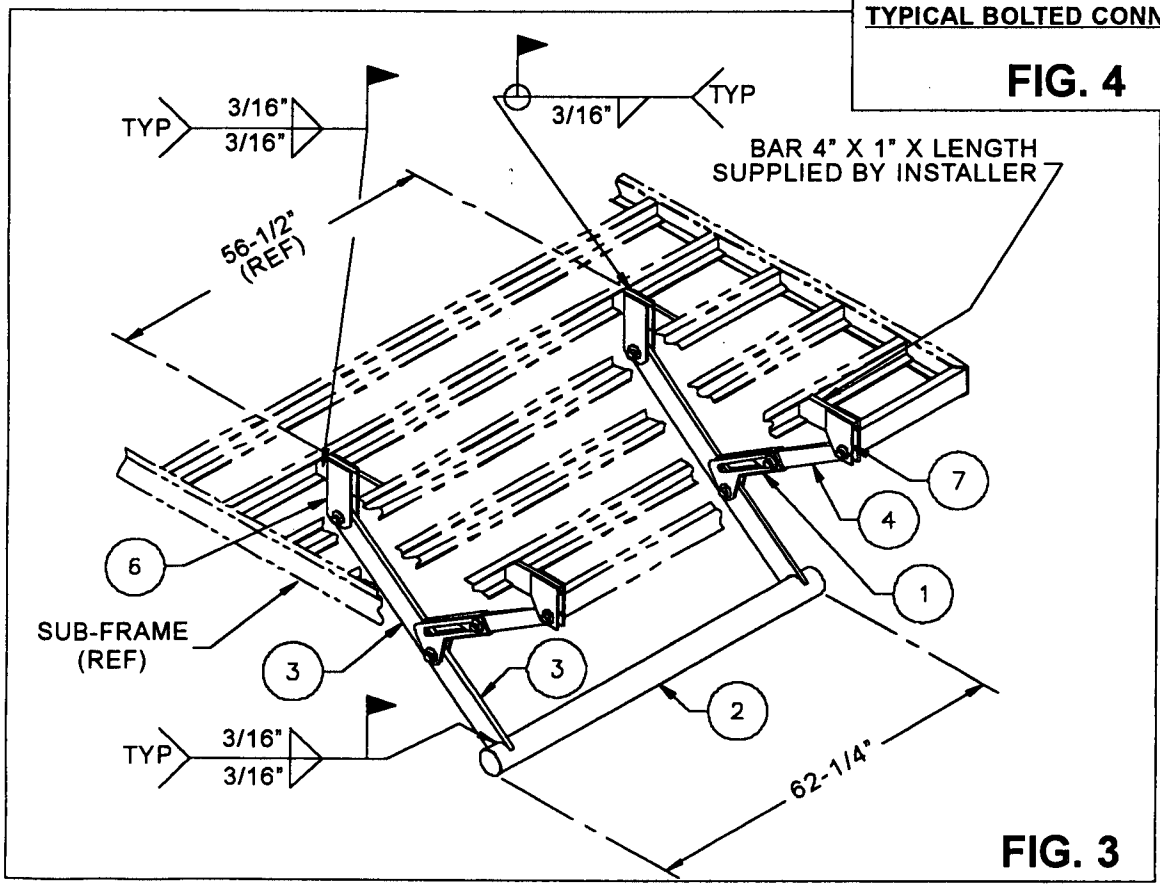


FIG. 3

SWAPLOADER®
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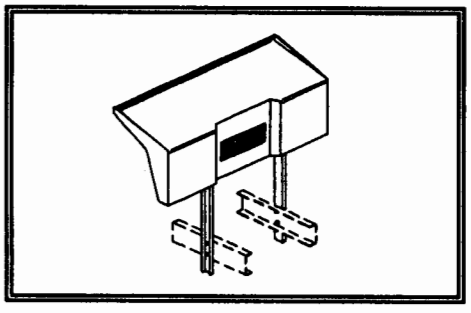
SWAPLOADER®
U.S.A. LTD.



CAB GUARD ASSEMBLY

(50H99)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting cab guard installation.
2. Position cab guard weldment [Part No. 50H95] on frame with sufficient clearance between cab and cab guard (See Fig.1).
3. Determine location for mounting holes. Mounting holes should not be located within 2-3/8" of the truck frame edge (See Fig. 1). Drill 21/32" dia. mount holes through cab guard channels.

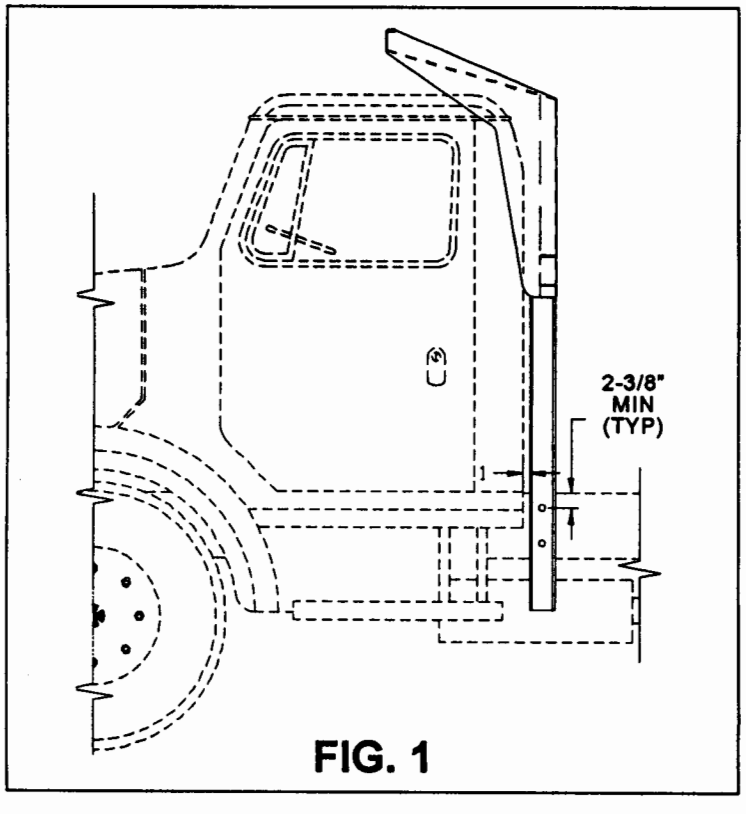


FIG. 1

CAB GUARD ASSEMBLY
(50H99)

INSTALLATION INSTRUCTIONS (continued)

4. Mark mounting holes through the cab guard weldment onto truck frame. Remove cab guard weldment and drill 21/32" dia. holes in truck frame.

5. Attach cab guard weldment to truck frame using fasteners provided (See Fig. 2).

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	1	50H95	CAB GUARD WDMT.	295.36
2	4	00P69	5/8-11 X 2 HHCS	.33
3	4	00P55	5/8-11 LOCKING HEX NUT	.18
4	4	00785	5/8 DIA. WASHER HT.	.08
			TOTAL	292.72

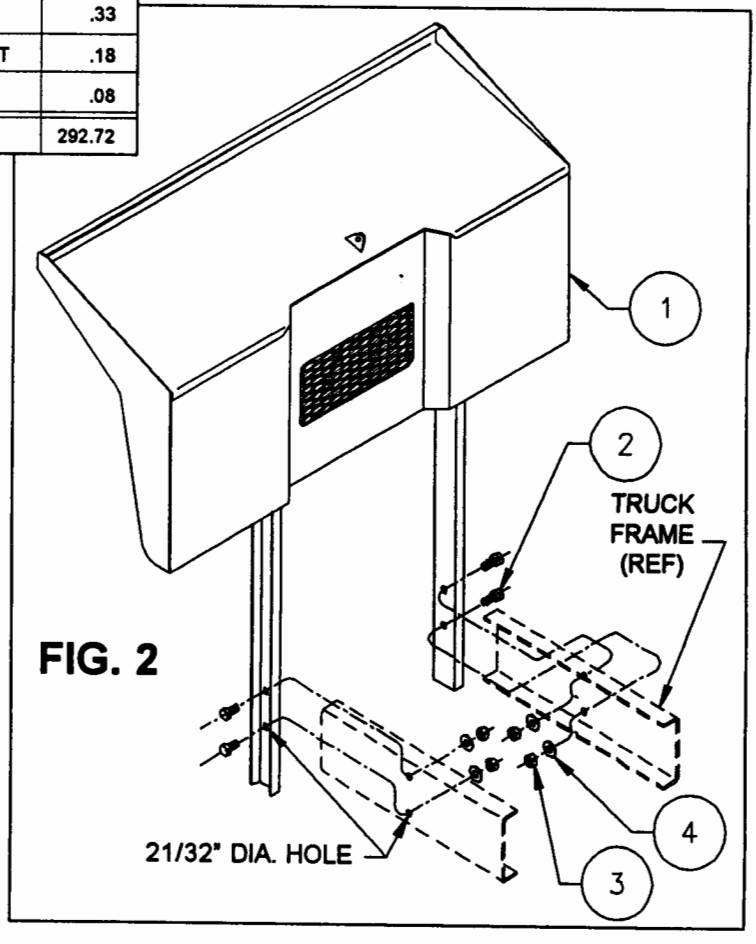


FIG. 2

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CONTAINER VARIABILITY SYSTEM ASSEMBLY
(52H21)

[Hoist Models: SL-220, SL-222 & SL-240]

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting the C.V.S. installation.

2. Attach the base plate bracket [Part No. 23H76] to the C.V.S. sub-assembly [Part No. 12H01] with fasteners provided (See drawing 52H21 *Section View A-A*).

3. Position the C.V.S. sub-assembly with attached base plate bracket on side of the mainframe z-channel (See drawing 52H21). Drill the necessary 13/32 Dia. holes into the z-channel using the C.V.S. sub-assembly with attached base plate bracket as the pattern to aid in locating hole placement. To allow for C.V.S. sub-assembly [Part No. 12H01] fastener clearance some notching of the z-channel lip may be necessary.

4. Attach the C.V.S. sub-assembly and base plate bracket to the mainframe z-channel with fasteners provided (See drawing 52H21).

5. Drain hydraulic oil level in the tank to just below the 1 1/4" NPT Port.

6. Remove the 90 degree hydraulic fitting [Part No. 11P07] that connects the upper hydraulic steel tubing to the top bulkhead fitting (See drawing 90H97). Replace with a swivel tee hydraulic fitting [Part No. 12P44] and retighten the hydraulic fittings (See drawing 90H85).

7. Remove the 1 1/4" NPT plug from the hydraulic tank. Install hydraulic fittings 12P20 & 12P92 as shown and tighten (See drawing 90H85).

8. Install the two 90 degree hydraulic fitting [Part No. 12P69] into the hydraulic valve on the 12H01 C.V.S. sub-assembly and tighten (See drawing 90H85).

9. Attach the hydraulic hose [Part No. 13P02] between the C.V.S. hydraulic valve and swivel tee hydraulic fitting [Part No. 12P44], and tighten (See drawing 90H85).

10. Determine the length of hose required to route the C.V.S. hydraulic valve to the hydraulic tank; the hydraulic hose [Part No. 12P93] may need shortened prior to final installation (See drawing 90H85) especially if excess length exists. The hydraulic hose [Part No. 12P93] comes with a reusable fitting that can be removed for purposes of shortening the hose. Remove the reusable fitting and shorten hose assembly as required. After hose has been shortened, lubricate the insert threads of the fitting and the I.D. of the hose (See Fig. 1). Measure 1 3/16 inches from the end of the hose and mark the hose for the socket depth. Screw the hose into the socket (left-hand thread) to the depth marked on the hose. Screw the insert into the socket until the insert touches the socket. Clean the inside of the hose assembly by either clean compressed air through it or by flushing it.

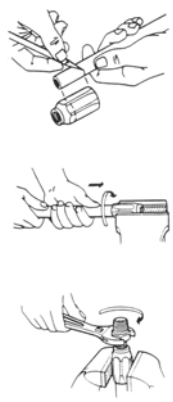


Figure 1

11. Once the overall hose length is adjusted, install between the C.V.S. hydraulic valve and the hydraulic tank fittings (See drawing 90H85), and tighten.

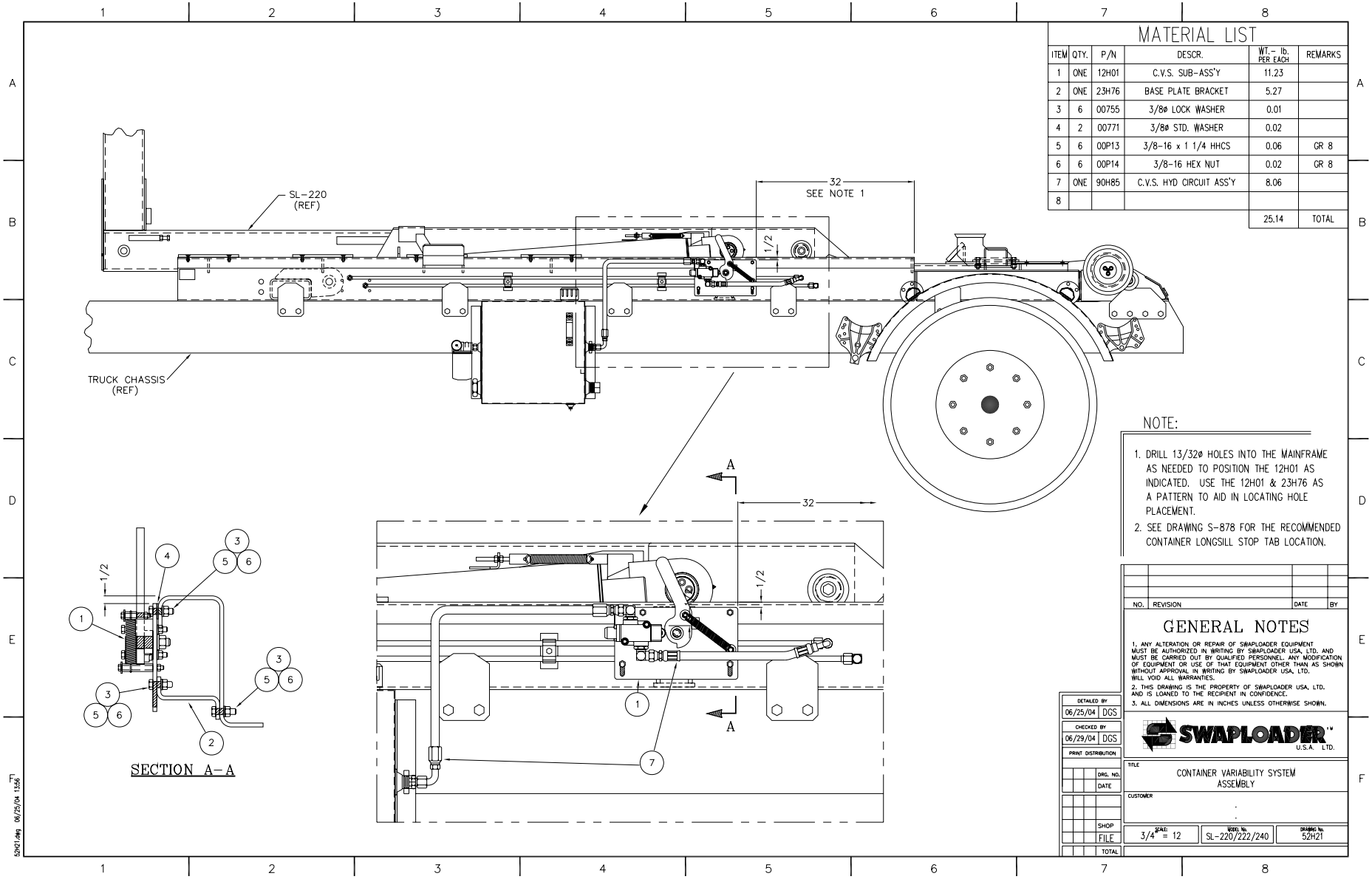
12. Remove both the hydraulic hose [Part No. 12P76] that connects from the upper bulkhead fitting inside the mainframe to the jib lockout valve [Part No. 21P28] and the 90 & 45 degree hydraulic fittings [Part No. 11P23 & 12P09] installed into the top side of the jib lockout valve (See drawing 90H79).

13. Replace with hydraulic fittings [Part No. 12P69 (Qty: 2) & 13P04], hydraulic hose [Part No. 11P98], and relief valve assembly [Part No. 21P93] and tighten (See drawing 90H85).

14. Refill hydraulic tank to proper fluid level.

15. Verify that the C.V.S. is operating properly. Start the truck, engage the P.T.O., and then retract the jib cylinder full stroke. Next, while extending the jib cylinder back out have someone push or rotate the C.V.S. lever arm forward (toward the back of the truck cab). The C.V.S. is operating properly when the jib cylinder stops extending by rotating the C.V.S. lever arm forward.

16. Containers to be used in conjunction with the C.V.S. need modified by adding a stop tab to the side of the container longsill (See drawing S-878). Dimensions given are a recommendation only. When modifying containers for use with the C.V.S. it is the primary responsibility of the installer to verify that adequate rear end overhang and full latch plate engagement into body locks exists for each container.



MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	ONE	12H01	C.V.S. SUB-ASS'Y	11.23	
2	ONE	23H76	BASE PLATE BRACKET	5.27	
3	6	00755	3/8ø LOCK WASHER	0.01	
4	2	00771	3/8ø STD. WASHER	0.02	
5	6	00P13	3/8-16 x 1 1/4 HHCS	0.06	GR 8
6	6	00P14	3/8-16 HEX NUT	0.02	GR 8
7	ONE	90H85	C.V.S. HYD CIRCUIT ASS'Y	8.06	
8					
				25.14	TOTAL

NOTE:

1. DRILL 13/32ø HOLES INTO THE MAINFRAME AS NEEDED TO POSITION THE 12H01 AS INDICATED. USE THE 12H01 & 23H76 AS A PATTERN TO AID IN LOCATING HOLE PLACEMENT.
2. SEE DRAWING S-878 FOR THE RECOMMENDED CONTAINER LONGSILL STOP TAB LOCATION.

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SWAPLOADER™ U.S.A. LTD.

TITLE: CONTAINER VARIABILITY SYSTEM ASSEMBLY

CUSTOMER:

SCALE:	MODEL No.	DRAWING No.
3/4" = 12	SL-220/222/240	52H21

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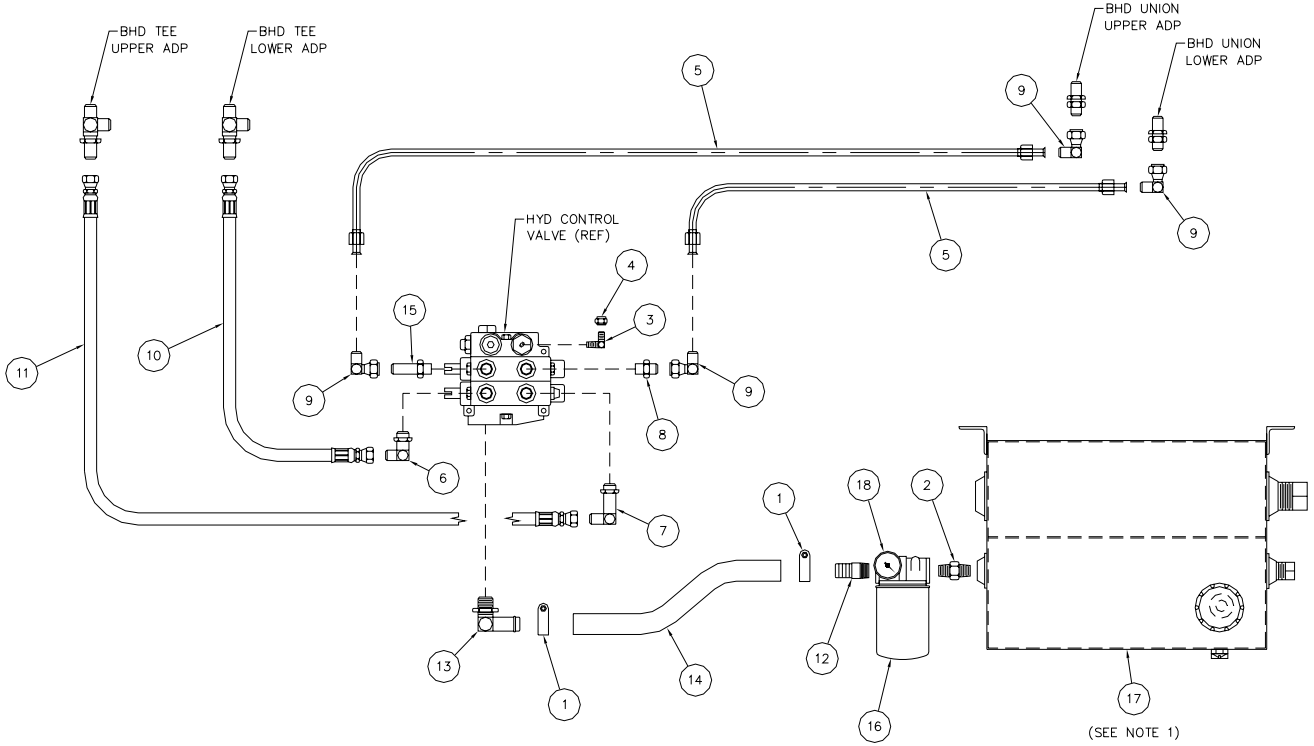

MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	2	10P21	T-BOLT CLAMP, 1 1/2ø	0.10	TBC-150
2	ONE	10P26	ADP, HYD MP / MP	0.70	5404-20-16
3	ONE	10P37	ADP, HYD MJIC / MP 90°	0.30	2501-4-4
4	ONE	10P38	ADP, HYD JIC CAP	0.10	304-C-4
5	2	10P73	HYD TUBING - REAR TO VALVE	3.62	
6	ONE	11P04	ADP, HYD MJIC/ORB 90°	0.40	6801-10
7	ONE	11P05	ADP, HYD MJIC/ORB LL 90°	0.40	6801-LL-10
8	ONE	11P06	ADP, HYD MJIC/ORB	0.40	6400-10
9	4	11P07	ADP, HYD MJIC/FMJIC SVL 90°	0.40	6500-10
10	ONE	11P98	HOSE ASS'Y 1/2 HP X 28	1.37	
11	ONE	11P99	HOSE ASS'Y 1/2 HP X 33	1.52	
12	ONE	12P19	ADP, HYD HOSE INS / MP	0.30	ST10
13	ONE	12P26	ADP, HYD HOSE INS / ORB 90°	0.60	4601-16-12
14	ONE	12P31	HOSE 1 LP X 30	1.65	
15	ONE	12P61	ADP, HYD MJIC/ORB L	0.40	6400-L-10
16	ONE	20P22	HYD FILTER	2.30	
17	ONE	20P25	HYD TANK	63.00	
18	ONE	20P64	INDICATOR GAUGE	0.01	
				78.87	TOTAL

NOTE:

1. HYD TANK ASS'Y CONSISTS OF: TANK WELDMENT, TANK MOUNTED STRAINER, SIGHT GAUGE, FILLER/BREATHER CAP, MAGNETIC DRAIN PLUG, AND PORT PLUGS.

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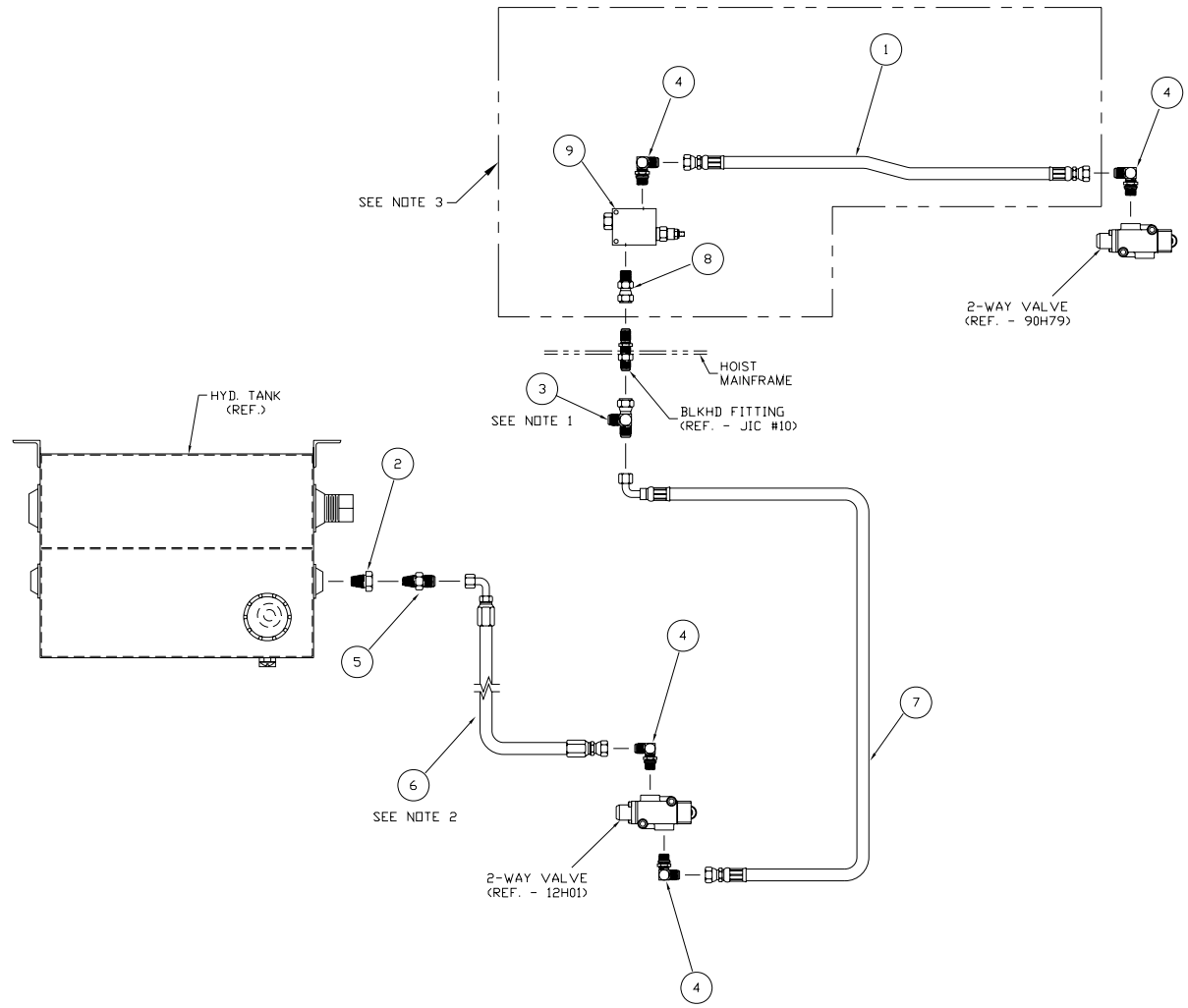
SWAPLOADER™ U.S.A. LTD.

TITLE: HYDRAULIC SUB-ASSEMBLY
CHASSIS-TANK CIRCUIT

CUSTOMER:

SCALE:	MODEL No.	DRAWING No.
1 1/2 = 12	SL-220/222/240	90H97

90H97.DWG 12/22/06 09:59



MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT.- lb. PER EACH	REMARKS
1	ONE	11P98	HOSE ASS'Y 1/2 HP x 28	1.68	
2	ONE	12P20	HYD ADP, MP/FP	0.30	1 1/4 x 1
3	ONE	12P44	HYD ADP, MJIC/FMJIC SVL TEE	0.40	6602-10
4	4	12P69	HYD ADP, MJIC/ORB 90°	0.30	6801-10-8
5	ONE	12P92	HYD ADP, MJIC/MP	0.40	2404-10-16
6	ONE	12P93	HOSE ASS'Y 1/2 HP x 48	2.25	
7	ONE	13P02	HOSE ASS'Y 1/2 HP x 21	1.26	
8	ONE	13P04	HYD ADP, ORB/FMJIC SVL	0.30	6402-8-10
9	ONE	21P93	RELIEF VALVE ASS'Y	1.20	
			RPEC-LDN-FNJ		
10					
11					
				8.69	TOTAL

NOTE:

1. REPLACE 11P07 FITTING ON THE UPPER BULKHEAD FITTING WITH 12P44.
2. THE 12P93 HOSE ASS'Y HAS FIELD ASSEMBLED ENDS. SHORTEN HOSE TO AN APPROPRIATE LENGTH.
3. REPLACE 12P76 HOSE ASS'Y WITH 11H98, 12P69, 13P04, & 21P93 AS SHOWN.

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A	12P69 QTY OF 4 WAS 3	01/17/05	DGS

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SWAPLOADER U.S.A. LTD.

TITLE: HYD. SUB-ASSEMBLY C.V.S. CIRCUIT

CUSTOMER:

SCALE: 1 1/2" = 12 | MODEL No. SL-220/222/240 | DRAWING No. 90H85 A

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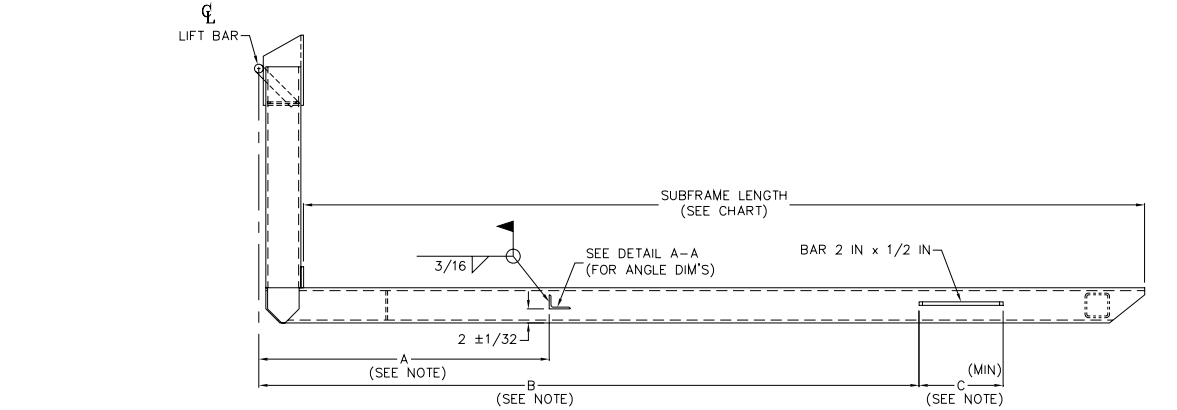
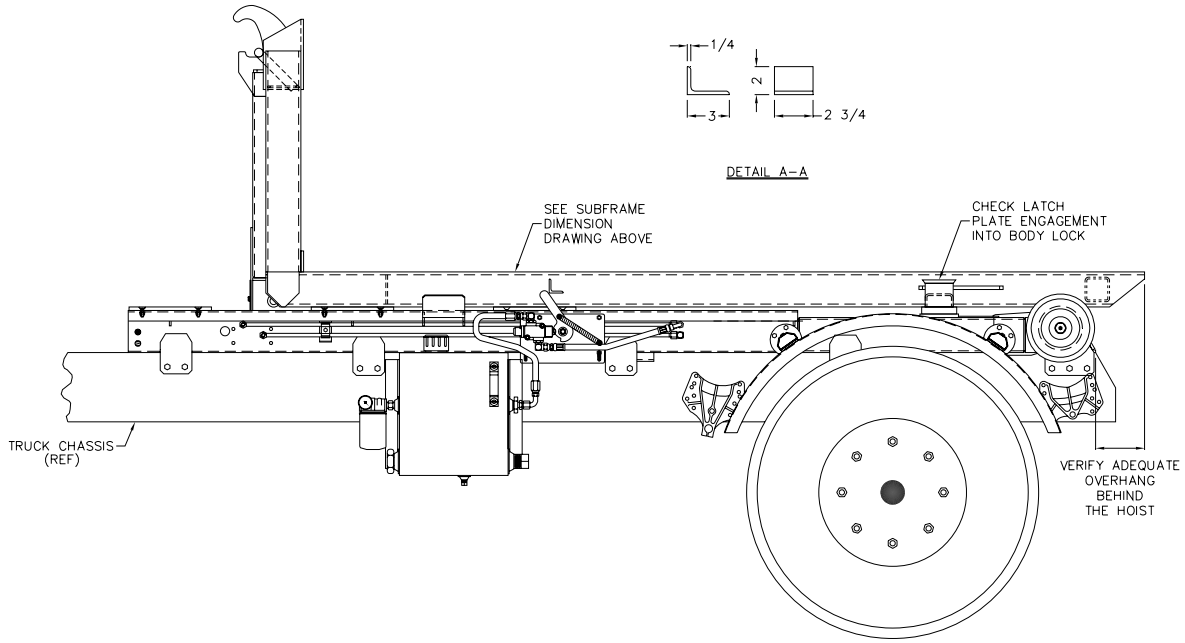


DETAIL A-A



HOIST	SUBFRAME LENGTH	A	B	C
SL-145	10'	40"	95"	12"
	11'	52"	95"	18"
SL-180	12'	49"	95"	12"
	13'	61"	95"	18"
SL-220/222	14'	74 1/2"	124 5/8"	12"
	16'	98 1/2"	124 5/8"	18"
SL-240	12'	58 1/2"	112 5/8"	12"
	13'	70 1/2"	112 5/8"	18"
SL-330/400	12'	75 1/4"	125"	12"
	13'	75 1/4"	125"	12"
SL-375	17'	90"	150"	24"
	18'	102"	150"	36"
SL-405	15'	64"	134"	12"
	16'	76"	134"	24"
SL-406	16'	76"	134"	12"
	17'	88"	134"	24"

NOTE:

1. DIMENSIONS GIVEN ARE RECOMMENDATIONS ONLY. IT IS THE RESPONSIBILITY OF THE CONTAINER VARIABILITY SYSTEM INSTALLER TO VERIFY THAT ADEQUATE REAR END OVERHANG AND LATCH PLATE ENGAGEMENT INTO BODY LOCK EXISTS.

NO.	REVISION	DATE	BY
B	ADDED SL-406 SPECS; REV'D SL-180 DIMS; 49 WAS 55 & 61 WAS 67	7/28/09	DGS
A	ADDED SL-180 SPECS	9/29/05	DGS

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TITLE: SUBFRAME MODIFICATIONS FOR CONTAINER VARIABILITY SYSTEM

CUSTOMER

SCALE: 3/4" = 12 | MODEL No. C.V.S. | DRAWING No. S-878 B

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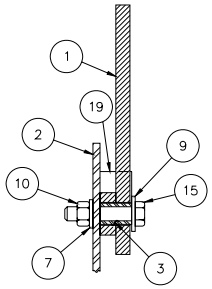
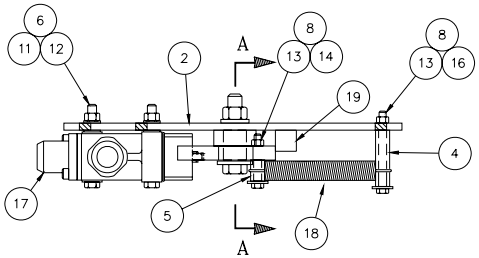
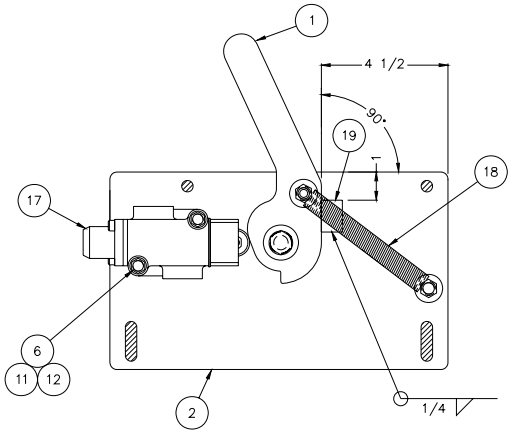
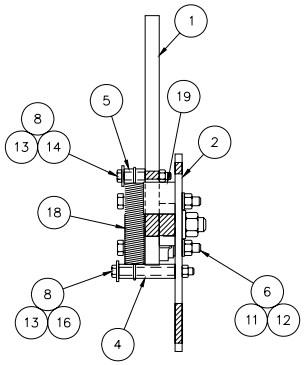


SECTION A–A







MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT. – lb. PER EACH	REMARKS
1	ONE	12H02	LEVER ARM WDMT	1.98	
2	ONE	23H70	BASE PLATE	5.81	
3	ONE	23H73	LEVER ARM SLEEVE	0.09	
4	ONE	23H74	LONG SPRING SLEEVE	0.08	
5	ONE	23H75	SHORT SPRING SLEEVE	0.03	
6	2	00752	5/16ø LOCK WASHER	0.01	
7	ONE	00760	1/2ø LOCK WASHER	0.02	
8	2	00770	1/4ø FLAT WASHER	0.01	
9	ONE	00772	1/2ø FLAT WASHER	0.02	
10	ONE	00P02	1/2–13 HEX NUT	0.06	GR 8
11	2	00P19	5/16–18 x 2 3/4 HHCS	0.06	GR 8
12	2	00P20	5/16–18 HEX NUT	0.01	GR 8
13	2	00P51	1/4–20 METAL LOCKING NUT	0.01	GR C
14	ONE	00P74	1/4–20 x 1 3/4 HHCS	0.03	GR 8
15	ONE	01P40	1/2–13 x 2 1/2 HHCS	0.19	GR 8
16	ONE	01P41	1/4–20 x 2 3/4 HHCS	0.04	GR 8
17	ONE	21P28	HYD VALVE	2.20	
18	ONE	90P84	11/16ø x 5 SPRING	0.30	
19	ONE	24H23	LEVER STOP	0.18	
				11.23	TOTAL

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SWAPLOADER™ U.S.A. LTD.

TITLE: CONTAINER VARIABILITY SYSTEM SUB-ASSEMBLY

CUSTOMER

SCALE:	MODEL No.	DRAWING No.
3" = 12	SL-145	12H01

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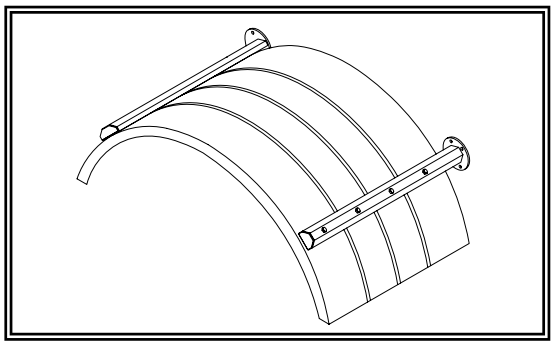


FENDER ASSEMBLY, SINGLE AXLE

Aluminum (10H93) / Steel (11H13)

(Diamond Plate Only)

INSTALLATION INSTRUCTIONS

1. **Review all directions and diagrams provided before starting fender installation.**

2. **Center fender above tire using block to maintain the proper height. Fender should be approximately 5" above tire to allow for suspension movement (See Fig. 1). A maximum width of 48" from center of the truck to the outside edge of the fender should be maintained (See Fig. 2).**

3. **Place fender bracket weldements [Part No. 10H74] on fender. Position the brackets to avoid any mounting obstacles on hoist and/or truck chassis.**

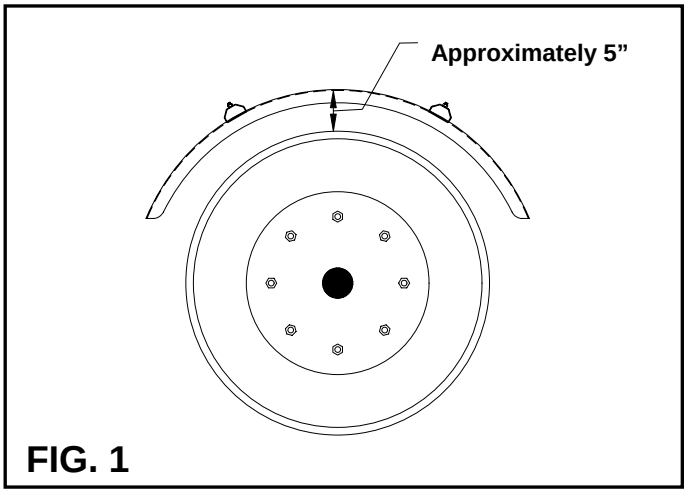


FIG. 1

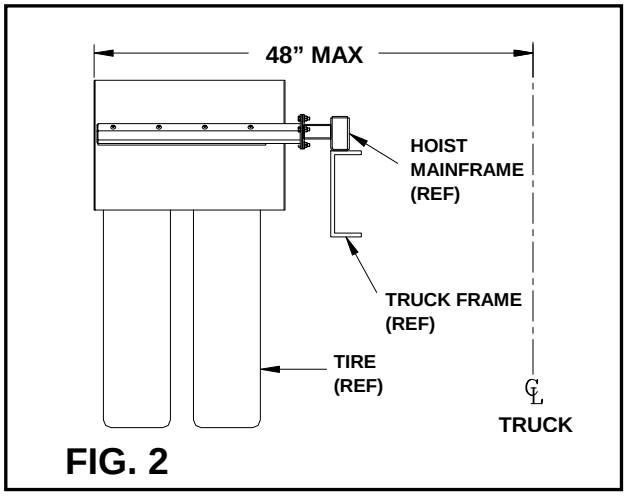


FIG. 2

All Figures are for Illustration Purposes Only

10/02/09

FENDER ASSEMBLY, SINGLE AXLE

Aluminum (10H93) / Steel (11H13)

INSTALLATION INSTRUCTIONS (continued)

4. **Mark mounting holes through the fender bracket weldment onto the fender. Remove the bracket and drill 7/16" dia. Holes in fender (See FIG. 3).**

5. **Attach fender bracket weldments to fender using fasteners provided.**

6. **Weld mounting plates [Part No. 21H37] to fender tubes [Part No. 21H61].**

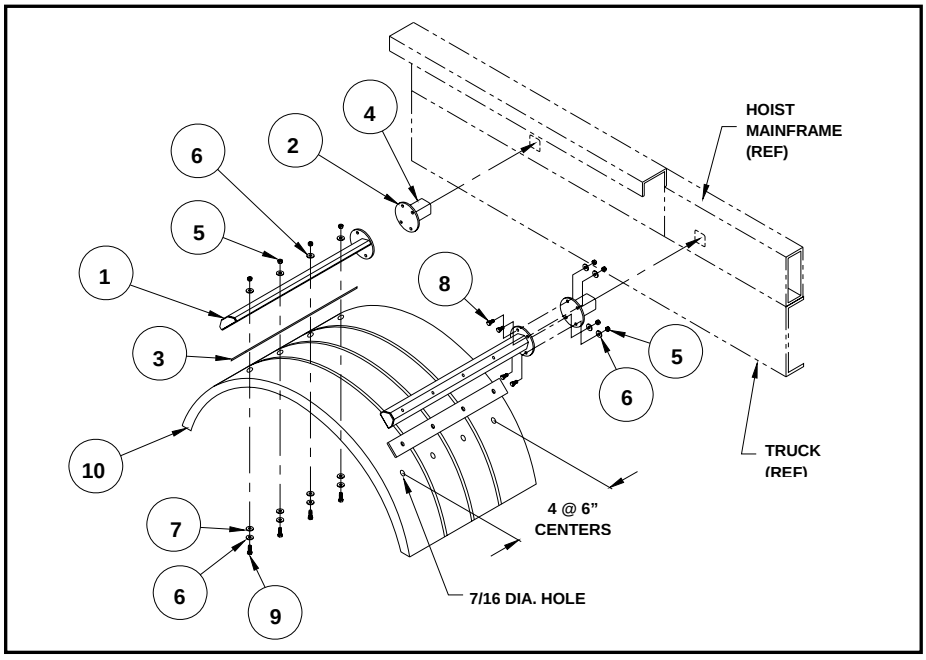
7. **Position fender tubes with mount plates on hoist mainframe; align with fender bracket weldments. (NOTE: Fender tube length may need to be modified to fit specific application.)**

8. **Weld fender tube to hoist mainframe. If attaching the fender tubes to the truck chassis, an additional mount plate may need to be fabricated so the assembly can be bolted to the to the truck chassis.**

9. **Attach fender bracket weldment [Part No. 10H74] to mounting plate [Part No. 21H37] using fasteners provided (See FIG. 3).**

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	4	10H74	FENDER BRACKET WDMT.	8.05
2	4	21H37	MOUNTING PLATE	1.09
3	4	21H42	RUBBER SPACER	.85
4	4	21H61	FENDER TUBE	1.26
5	32	00P34	3/8-16 UNC LOCKING NUT	.02
6	48	00771	3/8 DIA. FLAT WASHER	.05
7	16	00P78	3/8 DIA. NYLON WASHER	-
8	16	00P44	3/8-16 UNC X 1-1/2 HHCS	.07
9	16	01P21	3/8-16 UNC X 2-1/2 HHCS	.09
10	2		FENDER	
		90P24	FENDER – ALUMINUM	19.00
		90P25	FENDER – STEEL	35.00
			ALUMINUM FENDER TOTAL	87.80
			STEEL FENDER TOTAL	119.80



ADDITIONAL NOTES:

Prior to any welding, consult the truck manufacture for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

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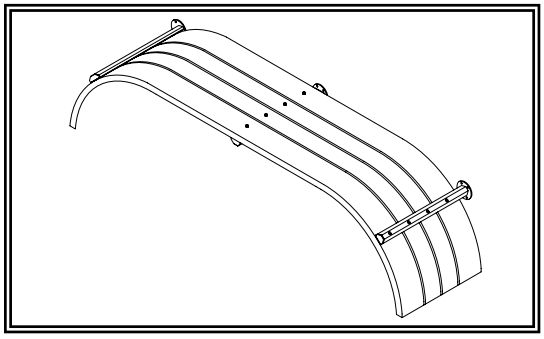


FENDER ASSEMBLY, TANDEM AXLE

Steel (11H14)

INSTALLATION INSTRUCTIONS

1. **Review all directions and diagrams provided before starting fender installation.**

2. **Center fender above tire using block to maintain the proper height. Fender should be approximately 6” above tire to allow for suspension movement (See Fig. 1). A maximum width of 48” from center of the truck to the outside edge of the fender should be maintained (See Fig. 2).**

3. **Place fender bracket weldments [Part No. 10H74] on fender. Position the brackets to avoid any mounting obstacles on hoist and/or truck chassis.**

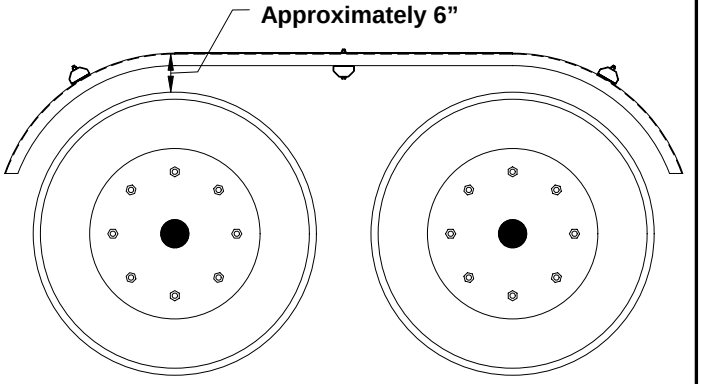


FIG. 1

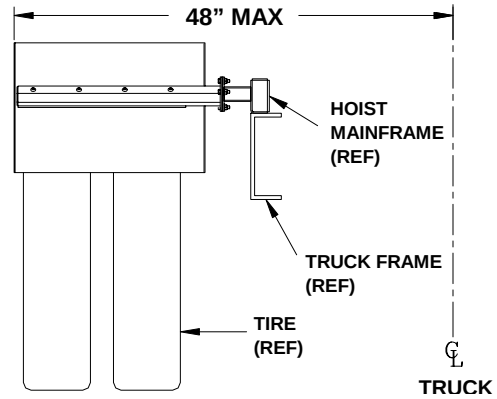


FIG. 2

All Figures are for Illustration Purposes Only

10/05/09

FENDER ASSEMBLY, TANDEM AXLE

Steel (11H14)

INSTALLATION INSTRUCTIONS (continued)

4. Mark mounting holes through the fender bracket weldment onto the fender. Remove the bracket and drill 7/16" dia. Holes in fender (See FIG. 3).

5. Attach fender bracket weldments to fender using fasteners provided.

6. Weld mounting plates [Part No. 21H37] to fender tubes [Part No. 21H61].

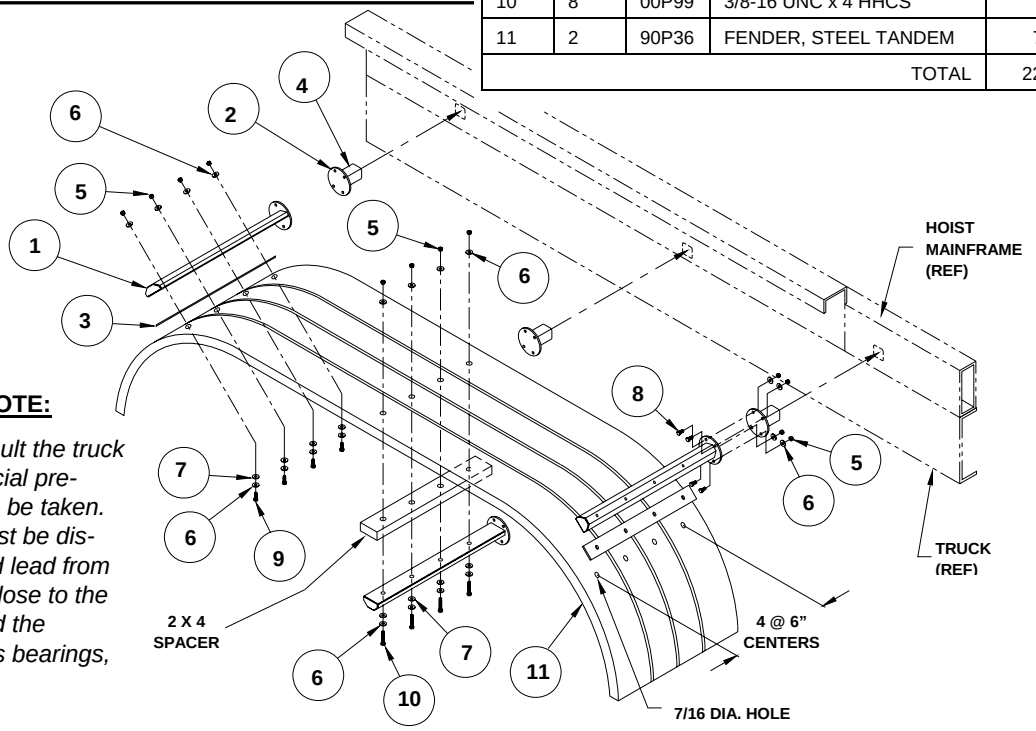
7. Position fender tubes with mount plates on hoist mainframe; align with fender bracket weldments. (NOTE: Fender tube length may need to be modified to fit specific application.)

8. Weld fender tubes to hoist mainframe. If attaching the fender tubes to the truck chassis, an additional mount plate may need to be fabricated so the assembly can be bolted to the truck chassis.

9. Attach fender bracket weldment [Part No. 10H74] to mounting plate [Part No. 21H37] using fasteners provided (See FIG. 3).

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	6	10H74	FENDER BRACKET WDMT.	8.05
2	6	21H37	MOUNTING PLATE	1.09
3	6	21H42	RUBBER SPACER	.85
4	6	21H61	FENDER TUBE	1.26
5	48	00P34	3/8-16 UNC LOCKING NUT	.02
6	72	00771	3/8 DIA. FLAT WASHER	.05
7	24	00P78	3/8 DIA. NYLON WASHER	-
8	24	00P44	3/8-16 UNC X 1-1/2 HHCS	.07
9	16	01P21	3/8-16 UNC X 2-1/2 HHCS	.09
10	8	00P99	3/8-16 UNC x 4 HHCS	.11
11	2	90P36	FENDER, STEEL TANDEM	77.00
			TOTAL	228.86



ADDITIONAL NOTE:

Prior to any welding, consult the truck manufacturer for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

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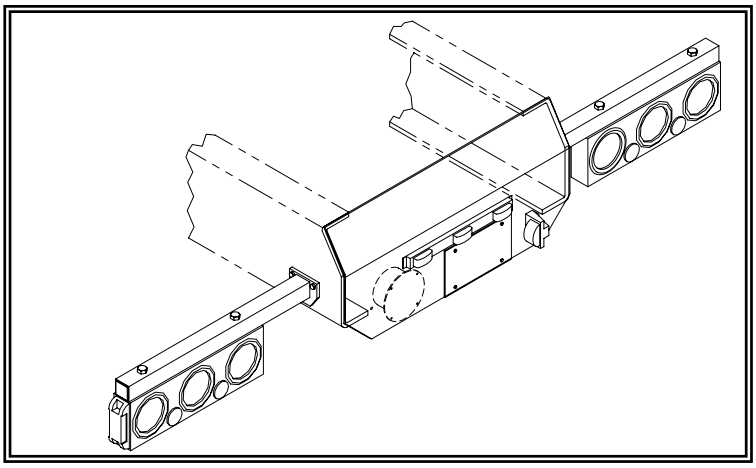

REAR LIGHT BAR ASSEMBLY

(51H68)

10/05/09

REAR LIGHT BAR ASSEMBLY
(51H68)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting rear light bar installation.

2. Trim truck frame to indicated dimensions (See Fig. 1). This step may have already been preformed if a bumper was previously installed.

3. Position center plate [Part No. 63H08] on the rear of the main frame. Weld center plate to truck frame (See Fig. 2 & Additional Notes).

4. Position stub light bar weldment [Part No. 51H69] on truck frame. Stub light bar weldment should be as high and as far back as possible on the truck frame to avoid interference with the bumper and fenders. It may be necessary to modify the stub light bar weldment to avoid interference. Drill mounting holes as required and mount using fasteners provided (See Fig. 3).

5. Attach the tail light module to the stub light bar weldments with the fasteners provided (See Fig 3).

6. Mount the identification light bar at top center of the center plate [Part No. 63H08] using the fasteners provided (See Fig. 3).

7. Mount license lamp right of the license plate (See Fig. 2) using the fasteners provided (See Fig. 3).

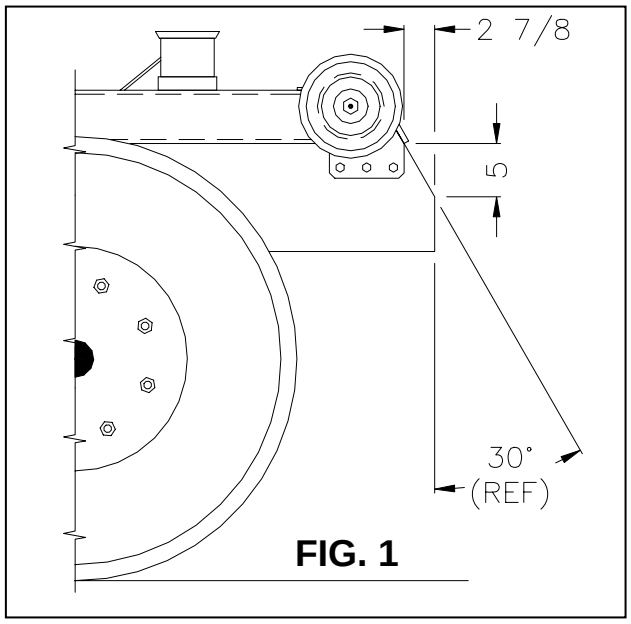

FIG. 1

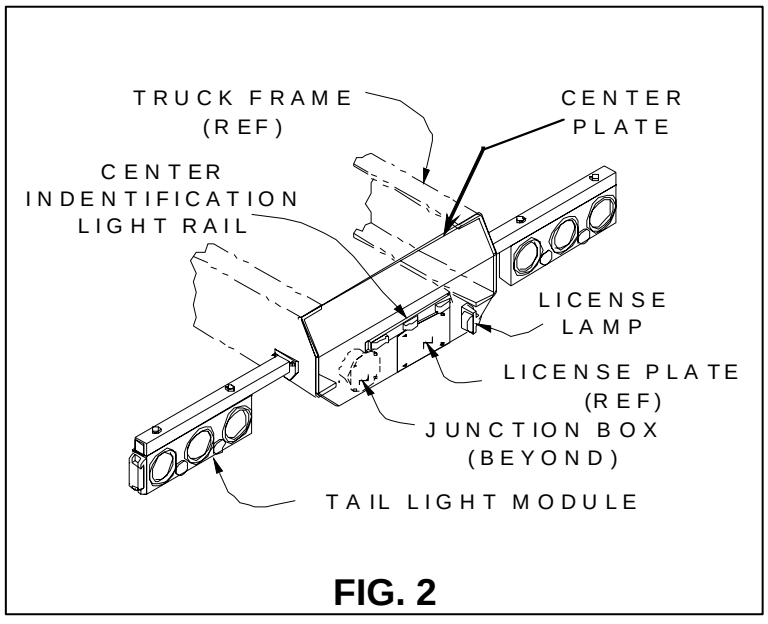

FIG. 2

All Figures are for Illustration Purposes Only

10/05/09

REAR LIGHT BAR ASSEMBLY
(51H68)

8. Mount junction box on the back left side of center plate (See Fig. 2), using the fasteners provided (See Fig. 3).

9. Route all wire harnesses into the junction box. Wire harnesses must enter the junction box through a compression fitting (Based on the size of the wire harness, choose a compression fitting with an appropriately sized grommet). Make wiring connections in junction box with wire harness from truck cab as indicated on wiring diagram (See Fig.4).

MATERIAL LIST

ITEM	QTY.	P/N	DESCR.	WT.– lb. PER EACH
1	2	51H69	STUB LIGHT BAR WDMT.	7.87
2	ONE	63H08	CENTER PLATE	27.33
3	6	00P44	3/8–16 x 1 1/2 HHCS	0.07
4	6	00P34	3/8–16 LOCKING HEX NUT	0.02
5	6	00771	3/8 DIA FLAT WASHER	0.01
6	4	01P18	5/8–11 x 3 HHCS	0.35
7	8	00P81	#8–32 x 1 RND HD SCR	–
8	8	00P82	#8–32 HEX NUT	–
9	8	00P83	#8 LOCK WASHER	–
10	ONE	40P26	LIGHT KIT ASSEMBLY	23.00
11	REF	40P27	LEFT TAIL LIGHT MODULE WITH HARNESS	–
12	REF	40P28	RIGHT TAIL LIGHT MODULE WITH HARNESS	–
13	REF	40P29	SIDE MARKER LAMP	–
14	REF	40P30	STOP, TURN, & TAIL LAMP	–
15	REF	40P31	BACK–UP LAMP	–
16	REF	40P32	LICENSE LAMP ASSEMBLY (WITHOUT HARNESS)	–
17	REF	40P33	LICENSE LAMP	–
18	REF	40P34	LICENSE LAMP HARNESS	–
19	REF	40P35	IDENTIFICATION LIGHT BAR RAIL	–
20	REF	40P36	ID LIGHT BAR LAMP	–
21	REF	40P37	ID LIGHT BAR HARNESS	–
22	REF	40P38	JUNCTION BOX ASSEMBLY	–
			TOTAL	68.07

ADDITIONAL NOTES:

Prior to any welding, consult the truck manufacture for any special precautions that may need to be taken. Typically the batteries must be disconnected and the ground lead from the welder should be as close to the part being welded to avoid the possibility of arcing across bearings, gears, etc.

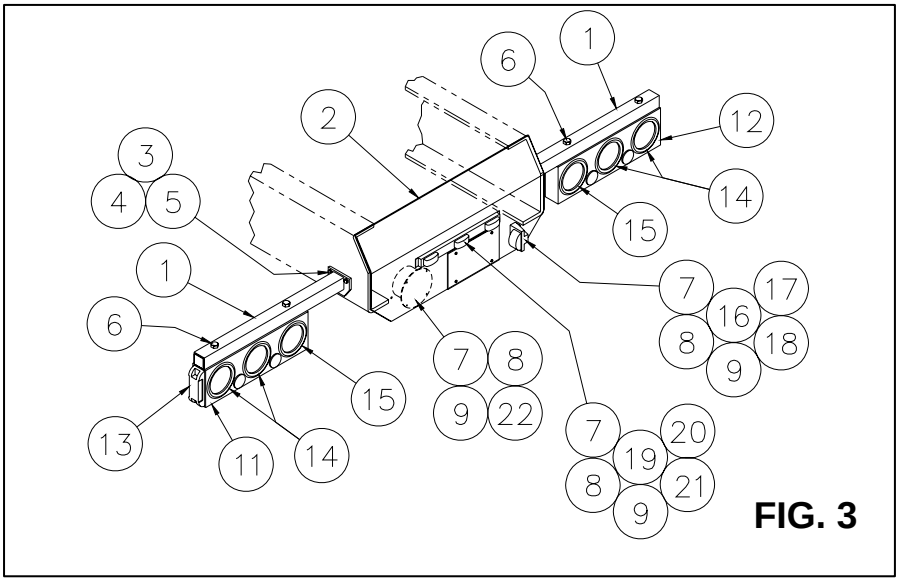

FIG. 3

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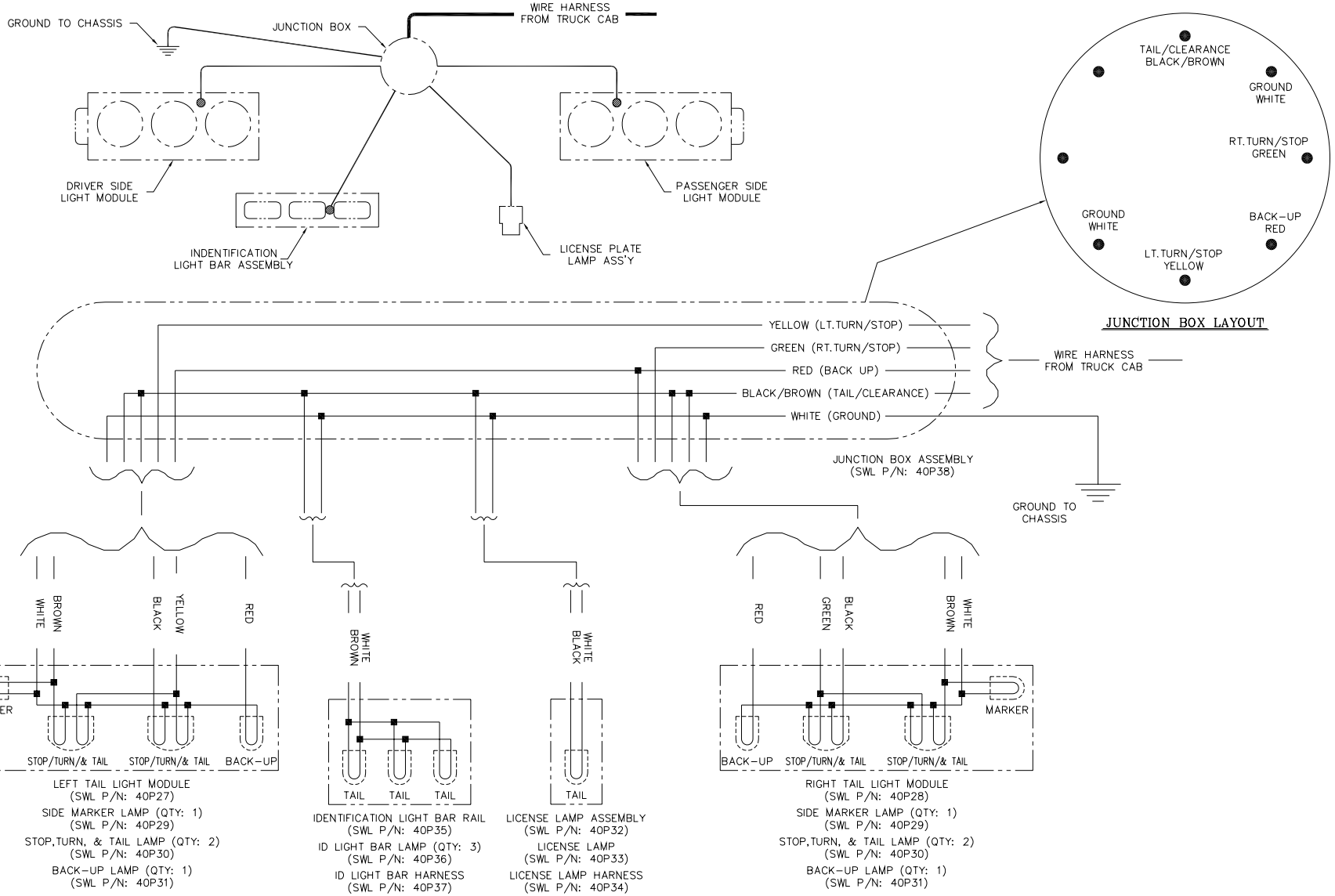
WIRE DIAGRAM



LEFT TAIL LIGHT MODULE
(SWL P/N: 40P27)
SIDE MARKER LAMP (QTY: 1)
(SWL P/N: 40P29)
STOP, TURN, & TAIL LAMP (QTY: 2)
(SWL P/N: 40P30)
BACK-UP LAMP (QTY: 1)
(SWL P/N: 40P31)

IDENTIFICATION LIGHT BAR RAIL
(SWL P/N: 40P35)
ID LIGHT BAR LAMP (QTY: 3)
(SWL P/N: 40P36)
ID LIGHT BAR HARNESS
(SWL P/N: 40P37)

LICENSE LAMP ASSEMBLY
(SWL P/N: 40P32)
LICENSE LAMP
(SWL P/N: 40P33)
LICENSE LAMP HARNESS
(SWL P/N: 40P34)

RIGHT TAIL LIGHT MODULE
(SWL P/N: 40P28)
SIDE MARKER LAMP (QTY: 1)
(SWL P/N: 40P29)
STOP, TURN, & TAIL LAMP (QTY: 2)
(SWL P/N: 40P30)
BACK-UP LAMP (QTY: 1)
(SWL P/N: 40P31)

Fig. 4

10/05/09

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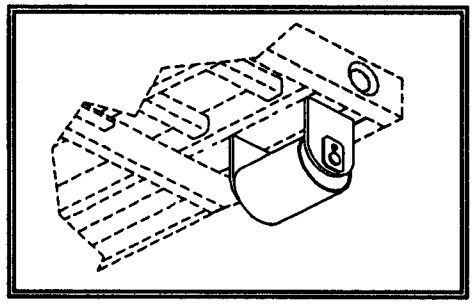

ROLLER & ROLLER MOUNT

(10H90 & 10H91)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting the roller and roller mount installation.
2. Locate position for roller mount brackets [Part No. 32H03] between cross sills of the container. Rollers should be positioned as far back and as wide as possible for stability. For hoist and folding bumper clearance, do not place brackets any closer than 11" to the subframe longsill (See Fig.1). Also, the roller axle center line should be approximately 1-11/16" below the bottom of the subframe longsill for roller clearance (See Fig. 1).

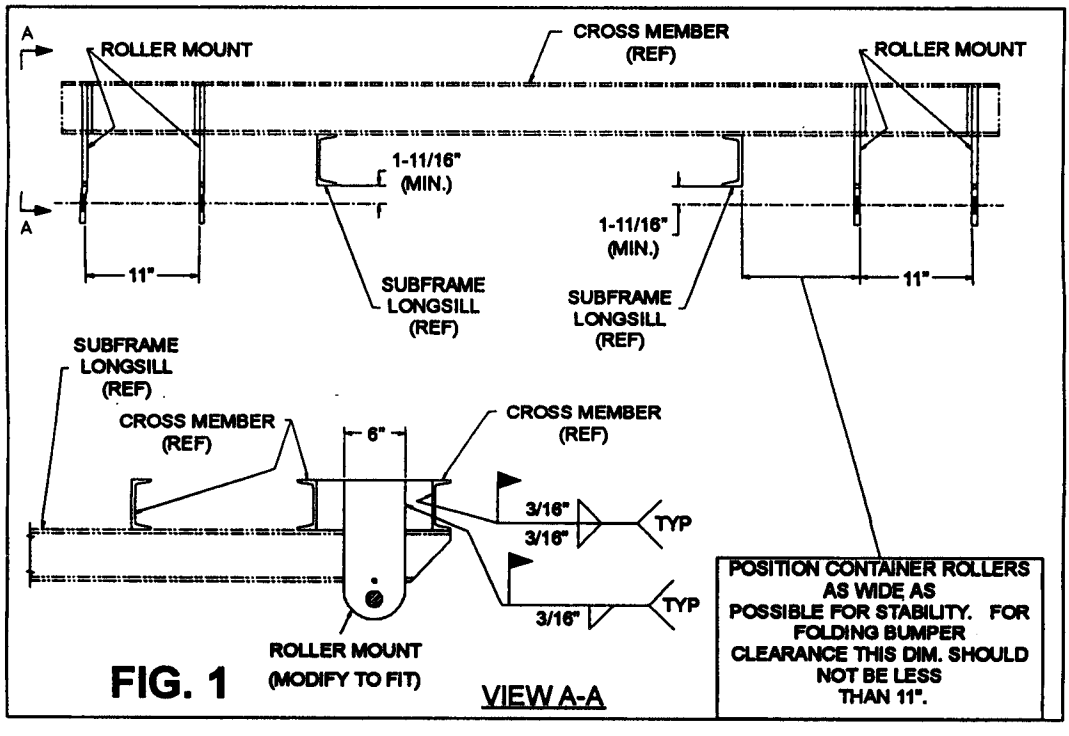

FIG. 1

VIEW A-A

ROLLER & ROLLER MOUNT
(10H90 & 10H91)

INSTALLATION INSTRUCTIONS (continued)

3. Some modification to the roller mount bracket may be required for the roller mount to fit properly. If the existing container cross members are wider than 6", a fabricated support member of 1/2" plate or thicker will need to be added (See Fig. 2).

4. Once the mount brackets are located on the container, weld the roller mount brackets in place (See Fig. 1).

5. Install the roller [Part No. 10H12] between the brackets with the roller axle [Part No.10H31] and the fasteners provided (See Fig. 3). Grease the rollers before use.

MATERIAL LIST

ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	4	32H03	ROLLER EAR	11.95
2	2	10H12	ROLLER WDMT.	39.78
3	2	10H31	ROLLER AXLE WDMT.	7.28
4	2	00P62	3/8-16 UNC X 1 BOLT	.05
5	2	90P03	1/8 NPT GREASE ZERK	.01
6	2	00755	3/8 DIA. LOCK WASHER	.01
7	2	00P36	3/8 DIA. WASHER H.T.	.10
			TOTAL	142.26

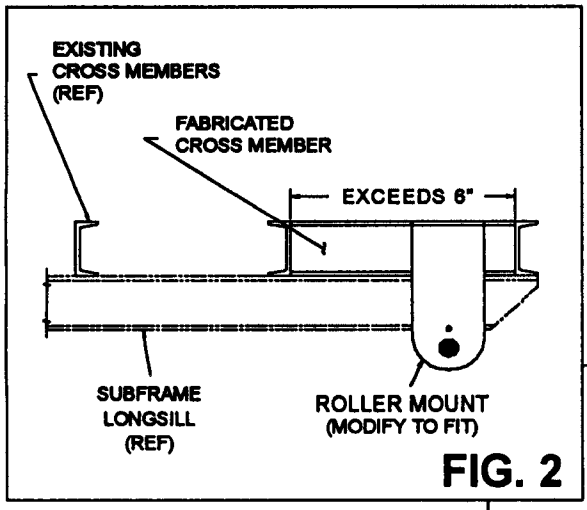

FIG. 2

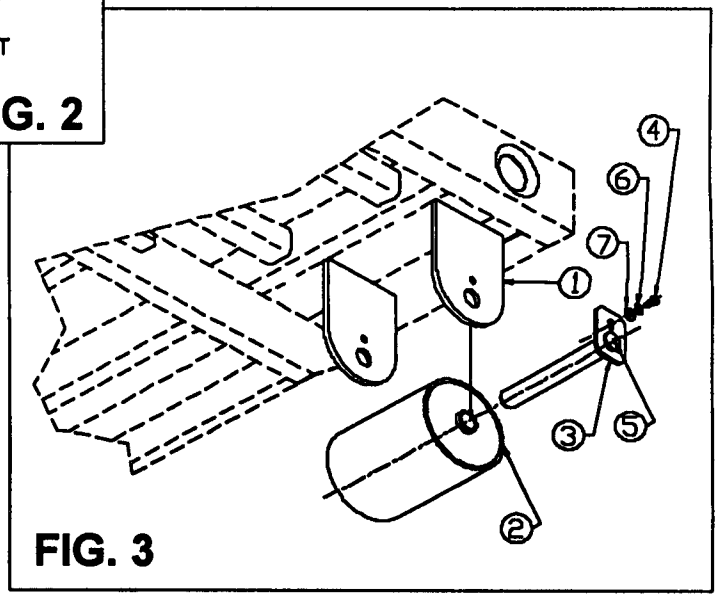

FIG. 3

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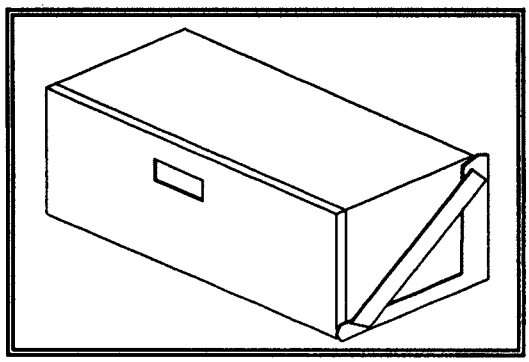

TOOLBOX

Aluminum (10H92) / Steel (11H12)

INSTALLATION INSTRUCTIONS

1. Review all directions and diagrams provided before starting toolbox installation.

2. Position toolbox brackets [Part No. 10H88] on truck chassis. (NOTE: toolbox has an envelope of 18"x18"x36". See Fig. 1 for hole dimensions.)

3. Mark position of mounting holes through brackets onto truck chassis. Remove brackets and drill 9/16" dia. holes.

4. Mount toolbox brackets using fasteners provided (See Fig. 1).

5. Position toolbox [Part No. 90P27 or 90P37] on brackets. (NOTE: toolbox hinge should be on the forward, bottom edge.)

6. Mark position of mounting holes through brackets onto toolbox. Remove toolbox and drill 9/16" dia. holes.

7. Mount toolbox to brackets using fasteners provided (See Fig. 1).

TOOLBOX
Aluminum (10H92) / Steel (11H12)

MATERIAL LIST				
ITEM	QTY	P/N	DESCRIPTION	WT lb. PER EA.
1	2	10H88	18" TOOLBOX BRACKET	11.34
2	2	22H71	TOOLBOX RUBBER SPACER (ALUMINUM TOOLBOX ONLY)	.27
3	1		18 X 18 X 36 TOOLBOX	
		90P27	ALUMINUM TOOLBOX	50.00
		90P37	STEEL TOOLBOX	72.00
4	8	00784	1/2 DIA. FLAT WASHER H.T.	.07
5	4	00P15	1/2-13 UNC X 1-3/4 HEX HEAD BOLT	.23
6	8	00P35	1/2-13 UNC METAL LOCKING NUT	.15
7	4	00P75	1/2-13 UNC X 1-1/2 SOCKET BUTTON HEAD BOLT	.12
8	4	00P76	1/2 DIA. NYLON FLAT WASHER (ALUMINUM TOOLBOX ONLY)	-
			ALUMINUM TOOLBOX TOTAL	76.38
			STEEL TOOLBOX TOTAL	97.84

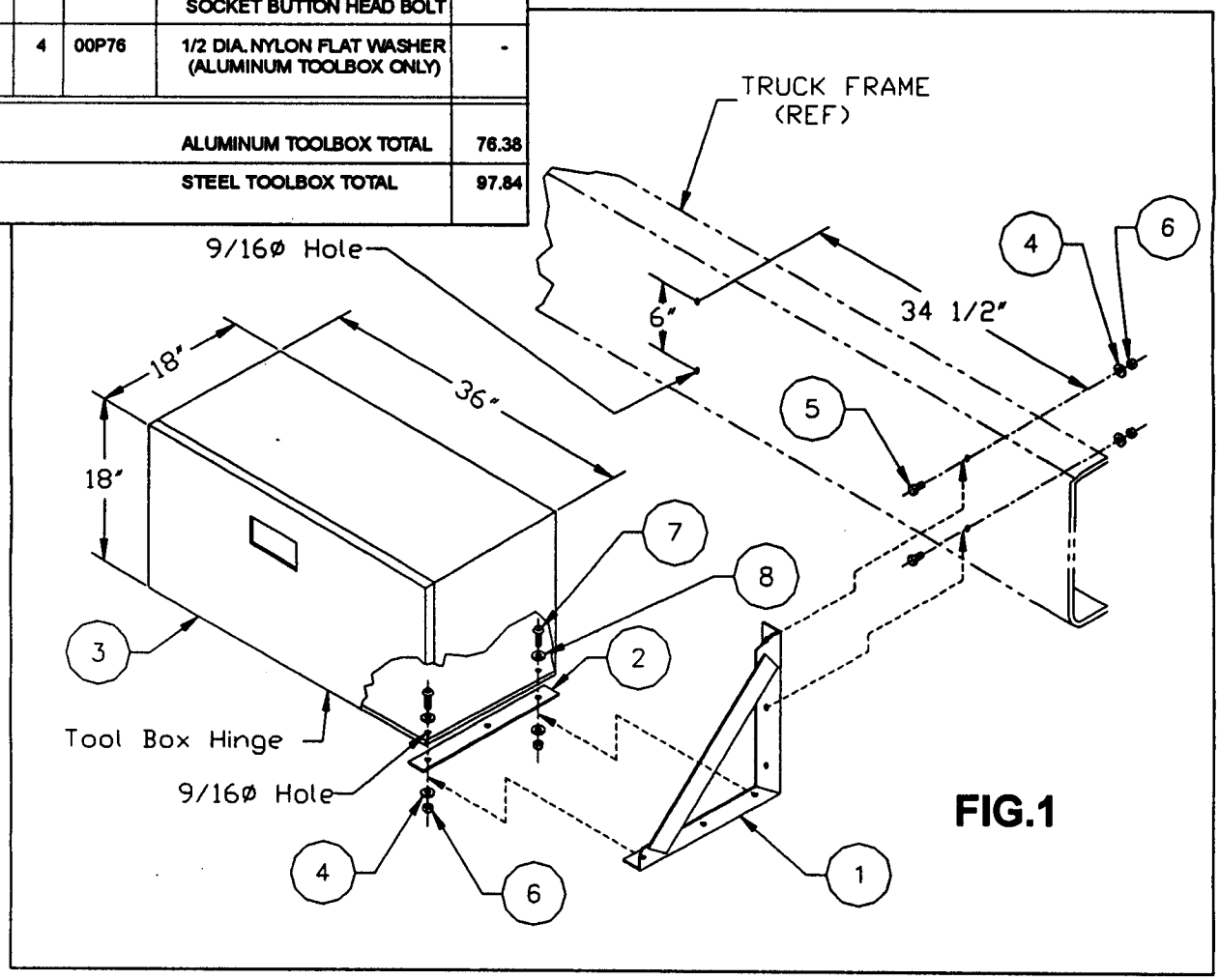

FIG.1

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PREDELIVERY CHECK LIST
SWAPLOADER MODEL SL-240 HOIST INSTALLATION

Conducted by: _____ **Date:** _____

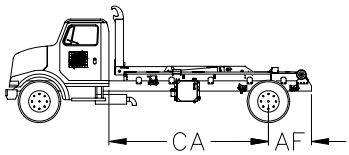
Dealer: _____

Customer: _____

I. COMPONENT INFORMATION

Hoist Serial No.: _____

Truck Chassis:
Identification No.: _____
GVW: _____
Distance from rear of cab to the Center Line of Rear Axle/Tandem (CA): _____
Distance From Center Line of Rear Axle/Tandem to Rear of Hoist (AF): _____



PTO:
Make: _____
Model: _____
Serial No.: _____
% of Engine RPM: _____

Hyd. Pump:
Make: _____
Model: _____
Serial No.: _____

II. INSTALLATION TO CHASSIS

Were there any problems installing the hoist to the truck chassis? _____ YES _____ NO

If yes, please describe _____

_____

_____

_____ All bolts checked for proper tightness.
_____ Please include photos of the hoist installed on the truck chassis. Be sure to include at least one photo from each side.

III. CONTROLS

_____ Controls easy to reach from driver's seat.
_____ Movement of controls correct per installation instructions.

PREDELIVERY CHECK LIST
SWAPLOADER MODEL SL-240 HOIST INSTALLATION

IV. HYDRAULICS INSTALLATION

_____ Correct hydraulic oil level in reservoir
_____ Check for leaks
Any abnormal noise during operation: _____ YES _____ NO
If yes, explain: _____

WITH ENGINE OPERATING @ 1000 RPM, RECORD THE FOLLOWING INFORMATION:

Cycle time for dump mode: Up _____ Sec. Down _____ Sec.
Cycle time for load/unload mode: Unload _____ Sec. Load _____ Sec.
Filter pressure _____ PSI.
Main pressure, controls in neutral _____ PSI.
Main relief pressure when extending jib cylinder (bottomed out)_____PSI.
Main relief pressure when extending lift cylinders (bottomed out)_____PSI.

NOTE: Connect pressure gauge to fitting provided on inlet section of Hyd. Control Valve (Ref. Pt. No. 10P37 fitting on Chassis-Tank Hyd. Circuit Drawing No. 90H97).

V. OPERATION

_____ Jib operates freely in both directions.
_____ Jib cannot be extended or retracted when raised in dump position or when pivot joint is tilted in unload position. Both safety hooks are fully engaged when jib is extended.
_____ Parts and operators manual in cab.
_____ Lubricate sliding jib and all grease zerks per installation instructions.

VI. DECALS

_____ All safety decals and product decals installed per Drawing 52H06.

ADDITIONAL COMMENTS:

_____

_____

_____

SEND COMPLETED FORM TO:

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1800 N.E. BROADWAY AVENUE
DES MOINES, IOWA 50313-2644

RETAIN ONE COPY FOR YOUR FILE.

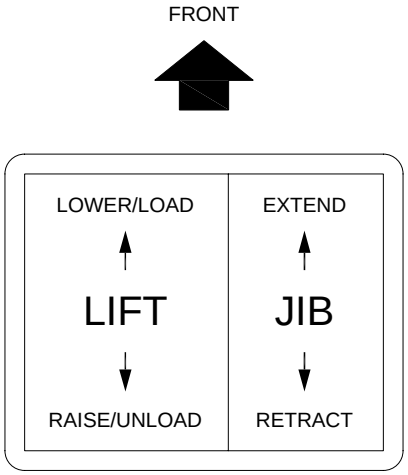
OPERATION

OPERATING INSTRUCTIONS

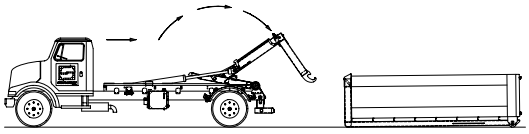
During all operations of the SwapLoader, the speed of the engine should be maintained at 1,000 to 1,200 RPM, assuming the ratio of the Power Take Off is about 100%.

LOADING A CONTAINER

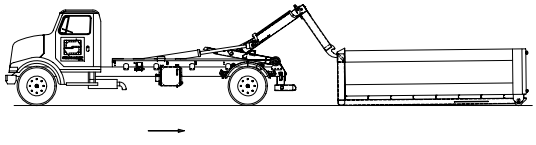
1. Engage the P.T.O. (Refer to P.T.O. manual for operation).



2. Retract the jib (right control lever backward). Then, tilt the arm backward (left control lever backward).

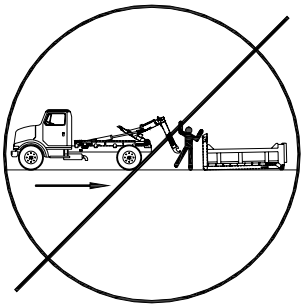


3. Make sure the work area in front of the container is clear of people and obstacles. Move the truck backwards until the hook engages the curved lifting bar of the container. **NEVER EXTEND THE JIB** to reach the proper catching height, rather tilt the arm.

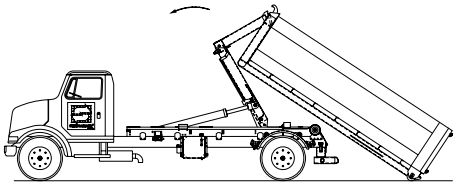


WARNING:

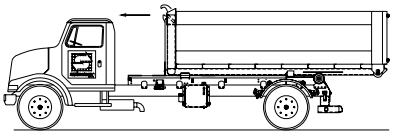
Make sure work area is clear of people and obstacles prior to dumping or unloading containers. SwapLoader strongly recommends that a back up alarm be installed on the truck chassis. The operation of the hook hoist is that the truck is backed up to the body to pick it up and so there is a potential pinch point between the body and the hook.



4. Cycle the arm forward (left control lever forward), making sure the curved lifting bar is securely attached to the hook. Release the brakes of the truck and steer to correctly align the truck with the container. Watch the container rails to see that they come to rest centered on the rear rollers. Do not extend the jib during lifting.



5. When the container is resting on the frame, move the jib forward all the way to ensure the container is held in the body locks (right control lever forward).



DUMPING

1. Move the jib forward (right control forward) to ensure that the container is locked.

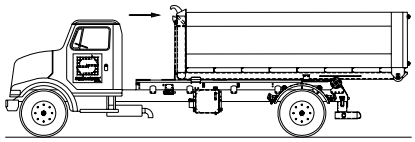
2. Extend the main lift cylinders (left control backward).

CAUTION:

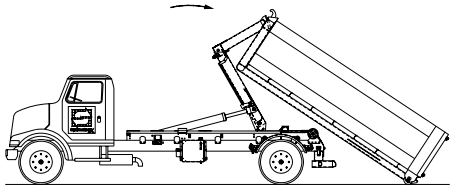
DO NOT RETRACT THE JIB WHILE DUMPING. Retracting the jib during dumping may unlock the mechanical jib latches which could allow the container to crash down onto the hoist and/or abruptly unload.

PLACING A CONTAINER ON THE GROUND

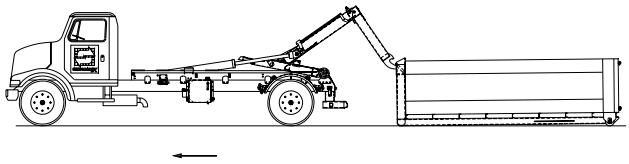
1. Move the sliding jib all the way back (right control backward) until mechanical jib latches unlock.



2. Tilt the arm backwards (left control backward). When the container touches the ground, release the brakes to free the truck for forward movement caused by the container.



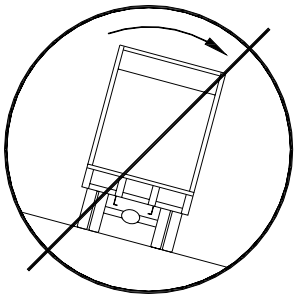
3. Rotate jib all the way till the container touches the ground. Pull away from container and rotate jib back into the transport position.



WARNING:

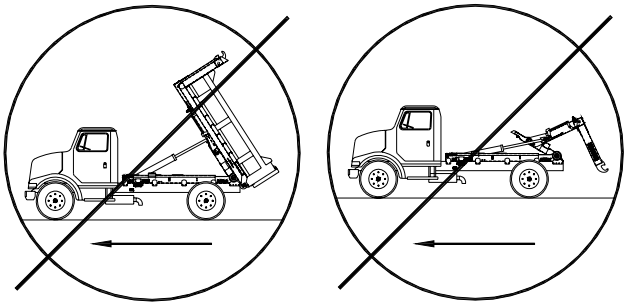
1. **DON'T OVER SPEED THE PUMP 1,500 RPM MAXIMUM.**

2. **DON'T DUMP ON UNEVEN GROUND.**



WARNING:
(CONTINUED)

3. DON'T DRIVE WITH THE HOIST IN THE DUMP POSITION OR WITH THE HOOK TILTED BACK.



MAINTENANCE

MAINTENANCE INSTRUCTIONS

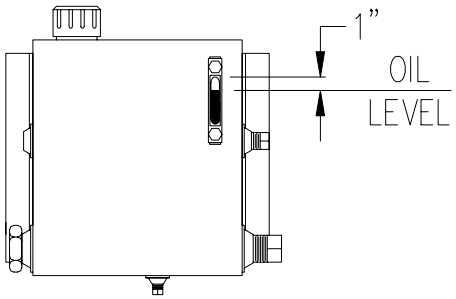
WEEKLY SERVICE - (50 OPERATIONS)

1. Lubricate with grease (Refer to Lubrication Diagram)

   - Lifting hook on jib

   - Jib slide - top, bottom, and side guides

2. Check hydraulic oil level. With the hoist in the transport position (lift cylinders retracted and jib cylinder extended – see diagram on front cover) the oil level in the tank should read approximately one inch below the top of the glass sight on the temperature/sight gauge (see diagram ➔).



3. Check hydraulic hose and fittings for leaks. Also check hydraulic hose for wear. Repair and/or retighten as necessary.

MONTHLY SERVICE - (200 OPERATIONS)

1. Lubricate with grease (Refer to Lubrication Diagram)

   - Fittings on lift cylinders (quantity: 4)

   - Front pins on rear pivot joint weldment (quantity: 2)

   - Fittings on rear pivot pins, and rollers (quantity: 4)

2. Check all bolts and retighten as required.

4. Check adjustments on mast lock (safety latch) mechanism. Refer to the Mast Lock Inspection & Adjustment Instructions on page 4-7 of the maintenance section.

3. Check adjustments on jib lockout valve. Refer to the Jib Lockout Valve Inspection & Adjustment Instructions on page 4-9 of the maintenance section

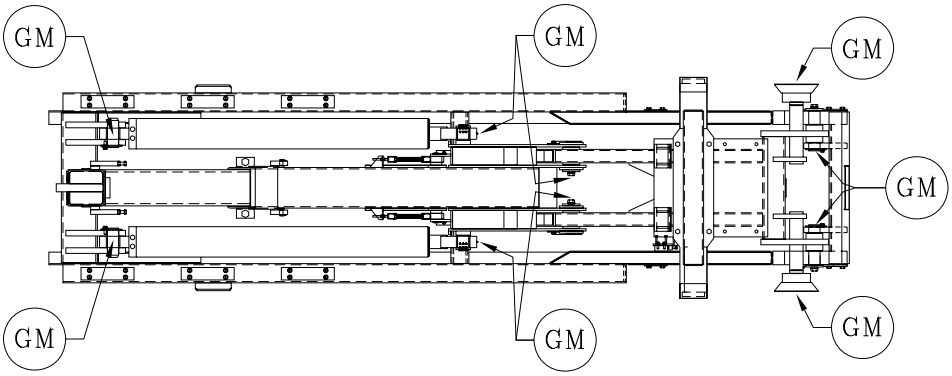
YEARLY SERVICE

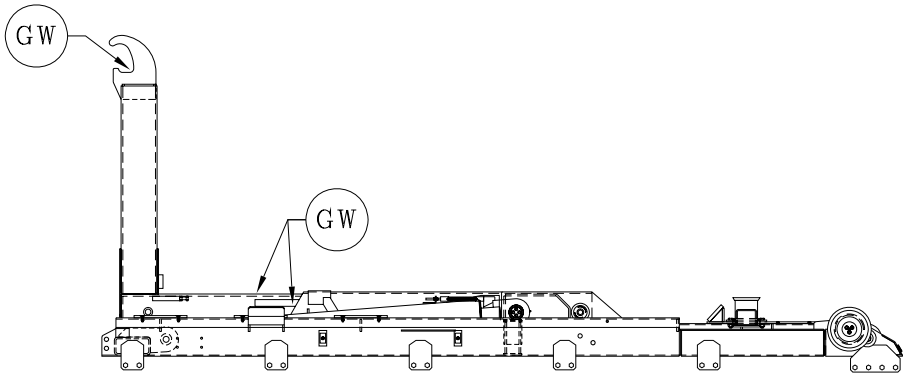
1. Check for proper gapping on outer tube clamp assembly. Refer to the Outer Tube Clamp Inspection & Adjustment Instructions on page 4-13 of the maintenance section.

2. Change hydraulic oil, replace hydraulic filter element, and wash out suction strainer.

3. Check main relief valve setting. Refer to the Pressure Check Instructions on page 4-11 of the maintenance section. (Pressure should be 2,800 PSI minimum).

LUBRICATION DIAGRAM





LEGEND
GM = GREASE MONTHLY
GW = GREASE WEEKLY

HYDRAULIC OIL SPECIFICATION & INTERCHANGE CHART

Select an ISO grade of Premium Anti-Wear Hydraulic Oil that is optimum for your location.

HYDRAULIC OIL SELECTION CHART

ISO Grade	Ambient Temperature Range		Viscosity
	°F	°C	SUS @ 100 °F
32	-10 to 85	-23 to 29	150-170
46	10 to 110	-12 to 43	195-240

NOTE 1: Always consult your local hydraulic oil supplier for more information.

NOTE 2: Use caution when operating at or beyond the recommended temperature extremes.

NOTE 3: Do not operate the hooklift hoist when hydraulic oil temperature on tank gauge exceeds 160 °F (71 °C) as damage to hydraulic components can occur.

ISO Grade 32

Company Name	Brand Name & Grade
Castrol (BP)	Paradene 32AW
CITGO	A/W 32
Exxon	Nuto H 32
Mobil	DTE 24 (DTE 13)
Shell	Tellus 32
SUNOCO	Sun Vis 706 (816 WR)

ISO Grade 46

Company Name	Brand Name & Grade
Castrol (BP)	Paradene 46AW
CITGO	A/W 46
Exxon	Nuto H 46
Mobil	DTE 25 (DTE 15)
Shell	Tellus 46
SUNOCO	Sun Vis 747 (821 WR)

HYDRAULIC FILTER ELEMENT SPECIFICATIONS & INTERCHANGE CHART

Element Size: 3.66 ϕ x 8.6”
Mounting Thread: 1-12 UNF
Filtration Rating: 10 micron (Nominal)
Flow Rating: 25 GPM

Company Name	Filter Part Number
Baldwin	BT8443
Behringer	BSO92E10N25
Donaldson	P550255
Fleetguard	HF6511
Flow Ezy	FEE30-10L
FPC	FPE40-10N

Company Name	Filter Part Number
Hydac	0085MA010P
LHA	SPE25-10
Norman	410
PTI	F4E-040CCB
Purolator	20201
Zinga *	AE-10L

* Brand of Element supplied from factory on hoist.

GENERAL MAINTENANCE PARTS LIST

PT. NO.	DESCRIPTION
21P63	**HYDRAULIC CYLINDER 6ϕ X 54 (Lift/Dump)**
21P66	SEAL KIT, HYDRAULIC CYLINDER
21P72	HYDRAULIC LINE ASS'Y (REPLACEMENT)
20P28	HYDRAULIC VALVE CARTRIDGE, COUNTERBALANCE

* * * * * * * *

21P67	**HYDRAULIC CYLINDER 3-1/2ϕ X 30 (Jib)**
21P65	SEAL KIT, HYDRAULIC CYLINDER
20P28	HYDRAULIC VALVE CARTRIDGE, COUNTERBALANCE

* * * * * * * *

20P24	**HYDRAULIC PUMP, GEAR (4.46 CID, L.H. ROT.) - Standard**
20P43	**HYDRAULIC PUMP, GEAR (4.46 CID, R.H. ROT.) - Optional**
20P41	SEAL KIT, HYDRAULIC PUMP

* * * * * * * *

20P22	**HYDRAULIC FILTER, 15 GPM**
20P23	HYDRAULIC FILTER ELEMENT
20P64	INDICATOR GAUGE, FILTER

* * * * * * * *

20P25	**HYDRAULIC TANK, 25 GALLON**
20P07	STRAINER, TANK MOUNTED - 25 GPM
20P96	SIGHT GAUGE, HYDRAULIC TANK
20P97	BREATHER CAP ASSEMBY, HYDRAULIC TANK

* * * * * * * *

20P39 **HYDRAULIC CONTROL VALVE, 2 SECT.**

20P42 HYDRAULIC RELIEF VALVE CARTRIDGE (2800 PSI)

* * * * * * * *

21P28 **HYDRAULIC VALVE, 2-WAY**

21P38 SEAL KIT FOR 21P28

* * * * * * * *

90P71 **WEAR PAD, 12" – (Z-CHANNEL)**

00755 3/8ϕ LOCK WASHER

00P14 3/8-16 HEX NUT

00P68 3/8-16 x 1 1/4 FL HD SCREW (SST)

* * * * * * * *

60H31 **CLAMP LINER – (OUTER TUBE)**

00P58 3/8-16 x 1-1/2 FL HD SCREW (BRASS)

* * * * * * * *

60H11 **WEAR BLOCK – (JIB)**

00P79 3/8-16 x 3/4 FL HD SCREW (BRASS)

* * * * * * * *

REPLACEMENT BEARING LIST

PT. NO.	DESCRIPTION
51H88	**PIVOT PIN (FOR 52H03 PIVOT JOINT SUB-ASSEMBLY)**
50P26	BRONZE BEARING; QTY: 1 PER PIN

* * * * * * * *

51H89	**MAIN PIVOT PIN (FOR 52H03 PIVOT JOINT SUB-ASSEMBLY)**
50P26	BRONZE BEARING; QTY: 1 PER PIN

* * * * * * * *

80P09	**ROLLER ASSEMBLY (FOR 52H03 PIVOT JOINT SUB-ASSEMBLY)**
23H07	BRONZE BEARING; QTY: 1 PER ROLLER

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21P63	**HYD CYLINDER 6ϕ x 54 (FOR 52H04 MAINFRAME SUB-ASSEMBLY)**
SPL	CYLINDER BEARINGS; CONTACT SWAPLOADER

* * * * * * * *

MAST LOCK INSPECTION & ADJUSTMENT INSTRUCTIONS

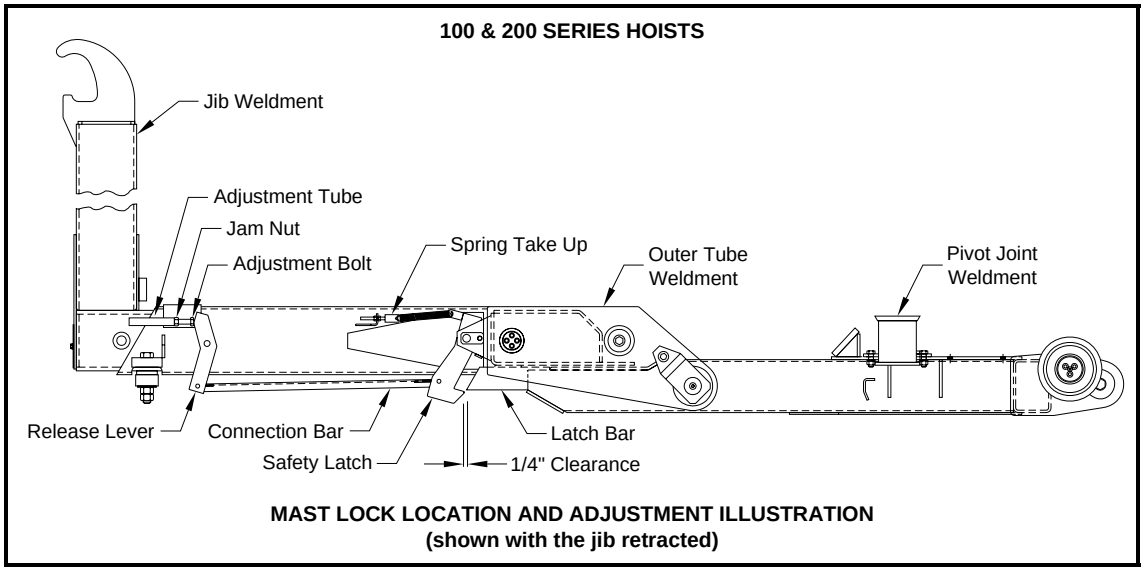
All SwapLoader hook-lift hoists come with a mast lock (safety latch) assembly that is located on the bottom side of the outer tube. When the jib is extended the mast lock then engages the latch bars (forks) on the pivot joint, making the jib, outer tube, and pivot joint into a continuous member for raising the container or body up into a dump mode.

With the jib fully retracted the mast lock then disengages the latch bars on the pivot joint allowing the hook-lift to enter into the mount-dismount cycle by pivoting around the front pins of the pivot joint. A properly adjusted mast lock will function smoothly and clear the latch bars on the pivot joint approximately a **1/4"** (see illustrations below).

INSPECTION

The mast lock assembly comes adjusted from the factory and should provide years of trouble free operation, however there may come a time when an adjustment may be required. Prior to making any adjustments, SwapLoader recommends that you begin with inspecting all mast lock components for damage or wear (see illustrations below).

First inspect the adjustment tube and bolt on the jib; make sure nothing is missing or bent. Next, inspect the release lever and connection bar on the outer tube; look for any missing or bent components such as ears or pins. Finally, inspect the safety latch (see illustration below); again make sure there are no missing or bent components such as ears, pins, or latches. Repair or replace any missing or bent components prior to making any adjustment to the mast lock assembly; refer to the mast lock (safety latch) assembly drawing for proper part numbers and identification of the components (See Drawing No. 52H01 in the Part List pages of the manual).



MAST LOCK LOCATION AND ADJUSTMENT ILLUSTRATION
(shown with the jib retracted)

ADJUSTMENT

If after inspecting all mast lock components and making any necessary repairs the gap between the mast lock and latch bars on the pivot joint is still incorrect, then an adjustment will need to be made. Please complete the following steps:

1. Retract the telescopic jib until the cylinder completely bottoms out (fully retracted).

2. Inspect the gap between the mast lock latch and the latch bar on the pivot joint. Look for a clearance of approximately 1/4" (if not proceed to steps 3-5).

3. Loosen the jam nut on the adjustment bolt.

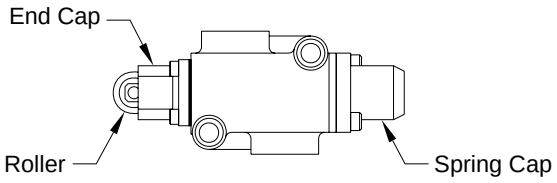
4. Turn the adjustment bolt; counter-clockwise to increase the gap or clockwise to decrease the gap.

5. Once the 1/4" clearance is achieved, then tighten the jam nut. Make sure to hold the adjustment bolt from turning when tightening the jam nut.

Please contact your SwapLoader Distributor or SwapLoader USA should you have any questions regarding this procedure.

JIB LOCKOUT VALVE INSPECTION & ADJUSTMENT INSTRUCTIONS

All SwapLoader hook-lift hoists have a jib lockout valve (see illustration below) to prevent accidental operation of the telescopic jib, while the hoist is up in a dump mode. Because the jib lockout valve can block the flow of hydraulic oil to the jib cylinder, should the valve come out of adjustment the telescopic jib may experience a reduction in extension or retraction speed to the point of stalling out.

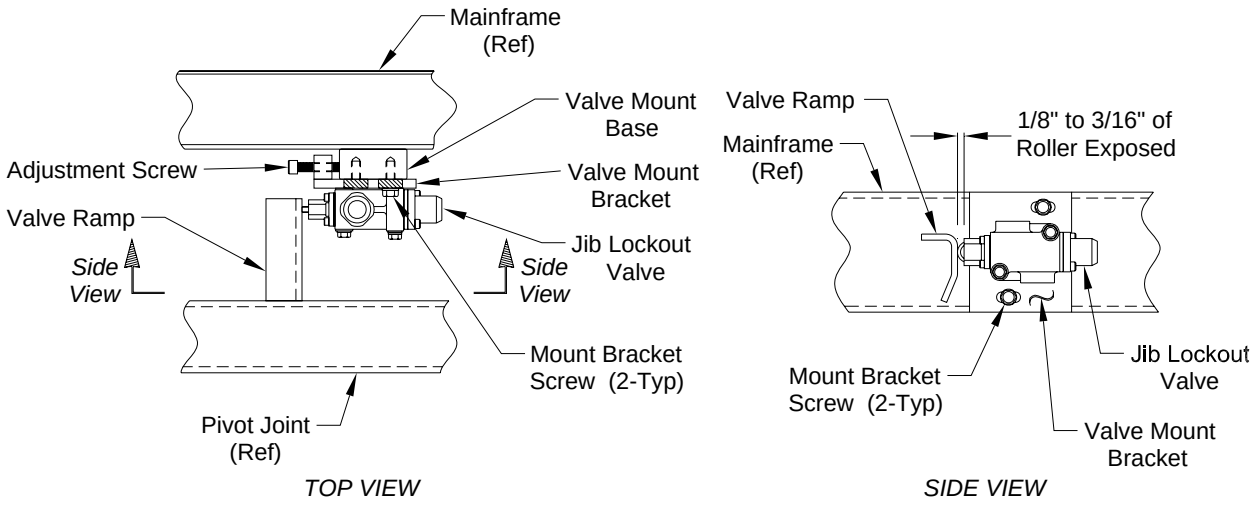


JIB LOCKOUT VALVE ILLUSTRATION

INSPECTION

When a noticeable loss in extension or retraction speed of the telescopic jib is experienced, the first step should be to inspect the jib lockout valve and valve mount ramp to ensure that they are adjusted properly and in good working order. The jib lockout valve is located on the inside rail of the hoist mainframe approximately two-thirds of the way back on the driver side of the hoist (see Drawing No. 52H04 in the Part List pages of the manual). Visually inspect the jib lockout valve roller and the condition of the valve ramp on the hoist pivot joint without a container on the hoist (see illustration on the next page); this is most easily performed with the hoist back in a dismount mode. If either part shows signs of wear or damage then replace or repair as needed.

With the jib lockout valve roller and valve ramp in good condition the next step is to check that the valve is positioned correctly with respect to the valve ramp. While looking at the roller end of the jib lockout valve, notice that the roller moves in and out of an end cap. With the hoist pivot joint in the down position, or horizontal to the hoist mainframe, the valve ramp should be in contact with the jib lockout valve roller. The roller should be depressed by the valve ramp so that 1/8” to 3/16” of the roller is exposed from the end cap (see illustrations above and on next page).



JIB LOCKOUT VALVE ADJUSTMENT ILLUSTRATION

ADJUSTMENT

Should the jib lockout valve need adjustment the first step will be to loosen the mount bracket screws (see illustration above). Reposition the jib lockout valve with respect to the valve ramp by turning the adjustment screw on the valve mount bracket as follows:

Clockwise Adjustment – Moves the jib lockout valve closer to the valve ramp
Counter-Clockwise Adjustment – Moves the jib lockout valve away from the valve ramp

Once the valve has been moved back into proper adjustment, then tighten up the mount bracket screws.

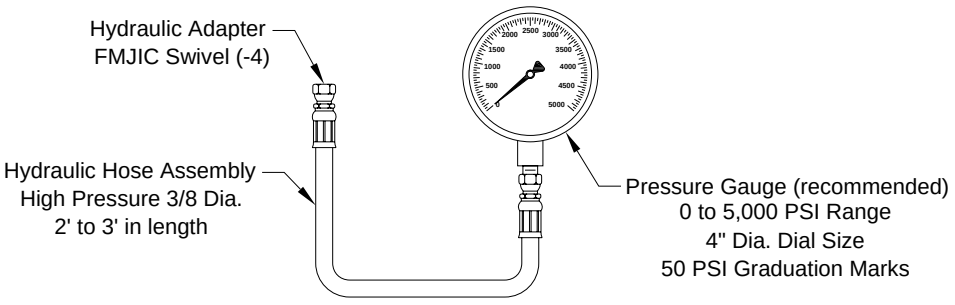
PART NUMBER & SPECIFICATION

SwapLoader Pt. No.	Work Port Size	Spool Type	Pressure (Maximum)	Flow Rate (Maximum)
21P28	3/4-16 ORB (SAE 8)	2-Way, 2-Position N.C.	4,600 PSI (Nominal)	16 GPM (Nominal)

Please contact your SwapLoader Distributor or SwapLoader USA should you have any questions regarding this procedure.

PRESSURE CHECK INSTRUCTIONS

When performing a pressure check on a SwapLoader hook-lift hoist, we recommend that you use a calibrated pressure gauge that reads pressures up to 3,500 PSI (a 0 to 5,000 PSI range gauge is recommended). As a minimum, the gauge should have 100 PSI graduation marks (50 PSI is preferred), and a 3 inch diameter dial size (4 inch dial is preferred). The pressure gauge should be outfitted with a female JIC #4 hydraulic adapter; preferably located at the end of a 3/8 inch diameter high pressure hydraulic hose that is 2 to 3 foot in length (see illustration below).

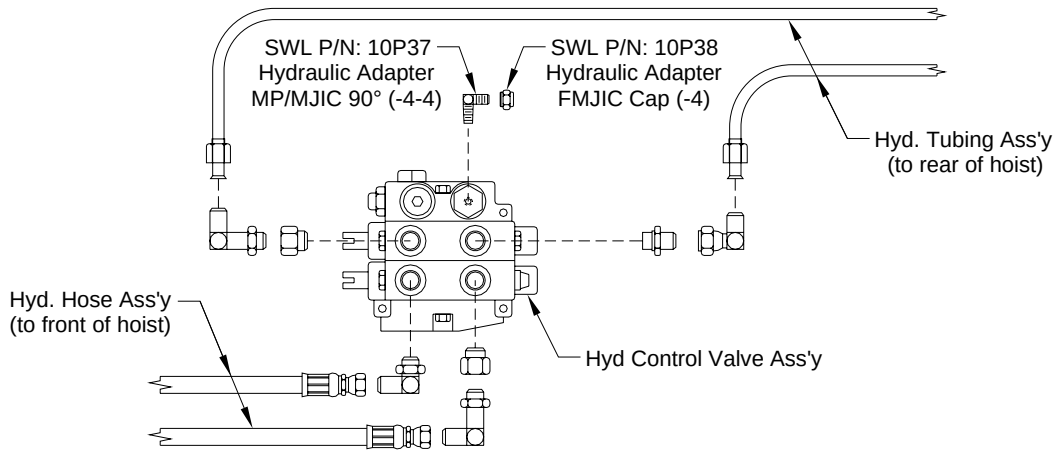


RECOMMENDED PRESSURE GAUGE ILLUSTRATION

Should you not be able to source a hydraulic gauge locally, SwapLoader can provide one at a reasonable cost (Hyd. Pressure Gauge & Hose Ass'y – Part No. 22P10).

PRESSURE CHECK STEPS

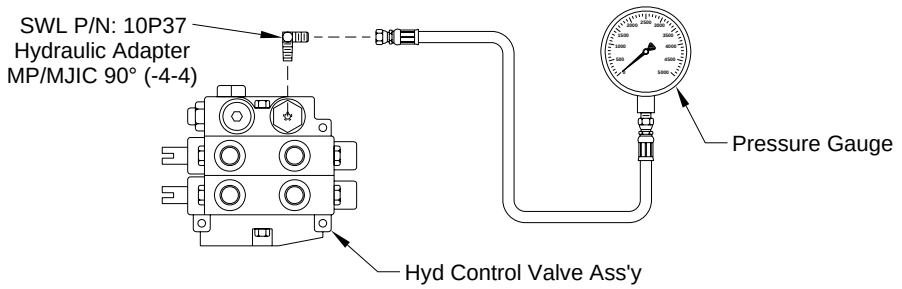
1. Locate the 90° male JIC #4 hydraulic adapter (SWL #10P37) found on the top of the hoist hydraulic control valve (see illustration below).



PRESSURE CHECK HYDRAULIC ADAPTER LOCATION ILLUSTRATION

This 90° male #4 JIC hydraulic adapter is supplied by SwapLoader, and should be installed in the hydraulic control valve at the time of the hoist installation (see the hoist parts & operations manual).

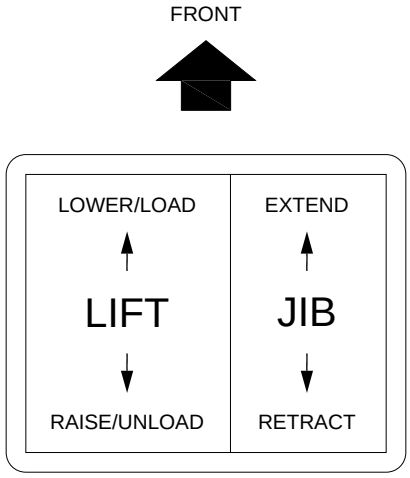
2. Remove the female JIC #4 cap from the male JIC #4 adapter and attach the pressure gauge to the hydraulic control valve (see illustration below).



PRESSURE GAUGE TO HYDRAULIC ADAPTER ILLUSTRATION

3. Start the truck and engage the P.T.O.

4. Push the lift (dump) circuit lever forward until the lift (dump) cylinders bottom out (see illustration below). Continue to push the lever forward until steps 5-6 are complete.



5. Check the gauge for the maximum developed system pressure. The SL-240 should have a reading of 2,800 PSI.

6. With the pressure check complete; release all functions and disengage the P.T.O.

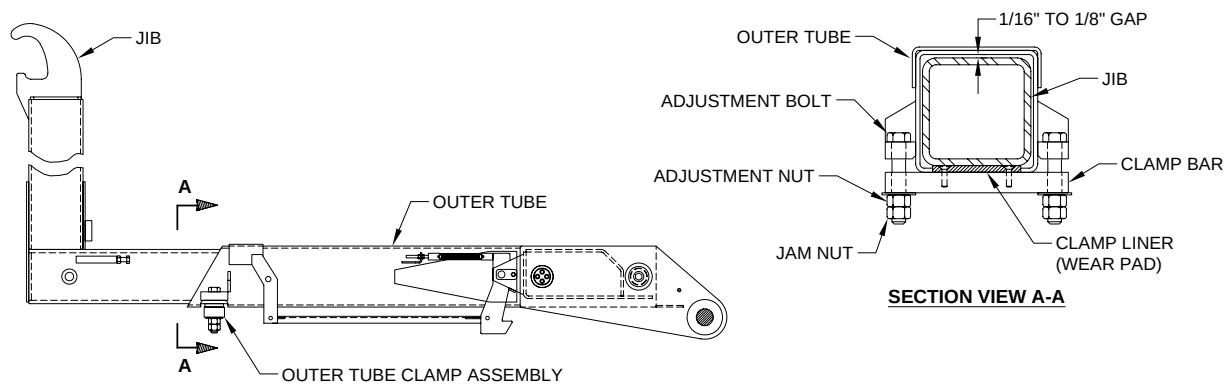
Please contact your SwapLoader Distributor or SwapLoader USA should you have any questions regarding this procedure.

OUTER TUBE CLAMP INSPECTION & ADJUSTMENT INSTRUCTIONS

All SwapLoader hooklift hoists come equipped with an outer tube clamp assembly located on the bottom of the outer tube at the opening where the jib telescopes in and out (see illustration below). On SwapLoader 100 & 200 series hoist models the outer tube clamp assembly is adjustable in height.

INSPECTION

The illustration below is a typical hoist clamp assembly for the 100 & 200 series SwapLoader hoist models. For optimum performance out of your SwapLoader SL-240 hooklift the gap between the top of the jib horizontal tube and the top inside surface of the outer tube should be kept between 1/16" to 1/8" (see Section View A-A below). When a gap greater than 1/8" exists, prior to making any adjustments: inspect the clamp liner, clamp bar, and adjustment fasteners for excessive wear or damage (see Section View A-A below). Replace any parts as needed (see Drawing No. 51H99 in the Parts List pages of the manual). If the clamp liner and other components are found to be or have been brought up to satisfactory condition, but a gap greater than 1/8" exists between the inner and outer tubes; then proceed to the outer tube clamp adjustment steps below.



100 & 200 SERIES HOIST CLAMP ASSEMBLY ILLUSTRATION

ADJUSTMENT

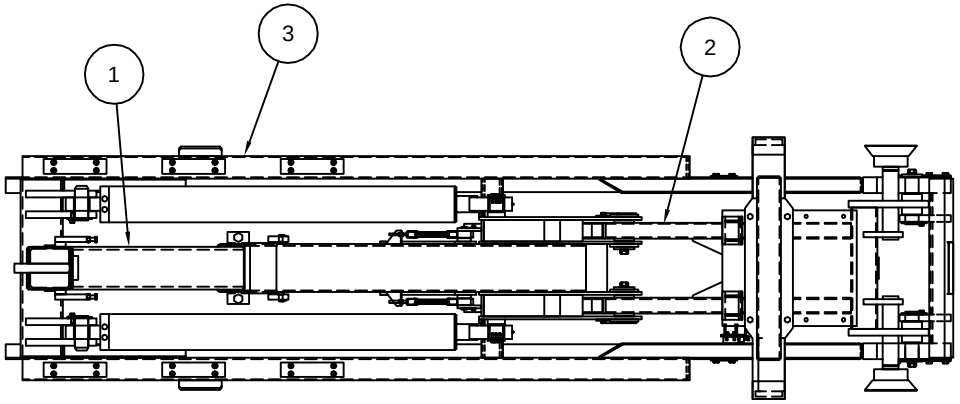
Refer to the 100 & 200 series Hoist Clamp Assembly Illustration above for the following adjustment steps:

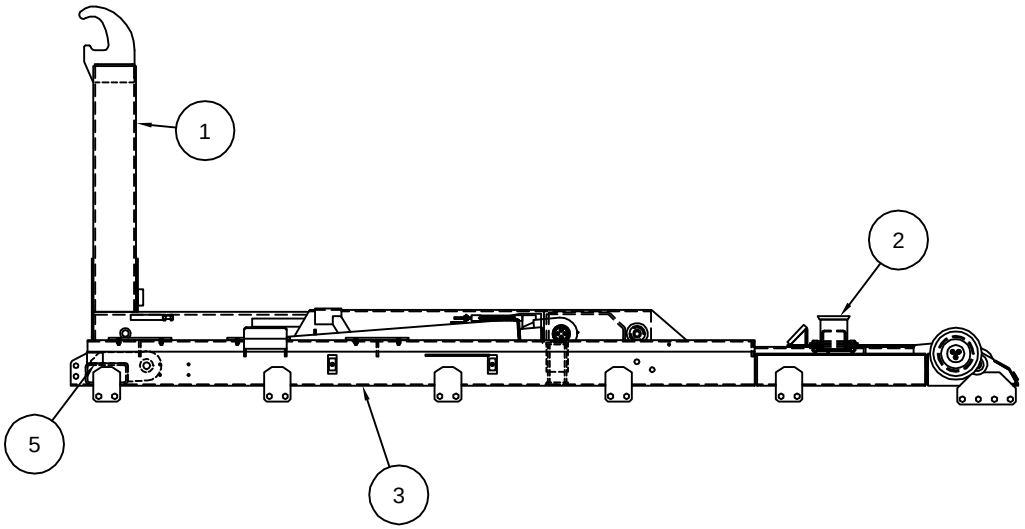
1. Loosen the jam nuts on the clamp bar adjustment bolt.

2. Tighten the adjustment nuts equally so that the clamp bar is drawn up evenly. Be sure to keep the jib horizontal tube level; make sure the gap is even between the inner and outer tubes from left to right.

3. Once the gap between the top of the jib horizontal tube and the top inside surface of the outer tube is between 1/16" to 1/8" the jam nuts can be tightened up.

PARTS LIST





PARTS LIST

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	51H99	TELESCOPIC JIB SUB-ASS'Y	1295.17	
2	ONE	52H03	PIVOT JOINT SUB-ASS'Y	749.54	
3	ONE	52H04	MAINFRAME SUB-ASS'Y	1528.60	
4	ONE	90H96	BASE HYDRAULIC ASSEMBLY	25.12	NOT SHOWN
5	ONE	90P74	SERIAL TAG	0.01	
6	ONE	52H34	HOIST INSTALLATION KIT	50.14	NOT SHOWN
7	ONE	90H97	CHASSIS TANK CIRCUIT	78.87	NOT SHOWN
8	ONE	90H98	PUMP CIRCUIT	12.14	NOT SHOWN
9	ONE	90H64	MANUAL CONTROL ASS'Y	49.39	NOT SHOWN
10	ONE	20P24	HYD PUMP, GEAR	55.00	NOT SHOWN
				3843.98	TOTAL

SWAPLOADER™ U.S.A. LTD.

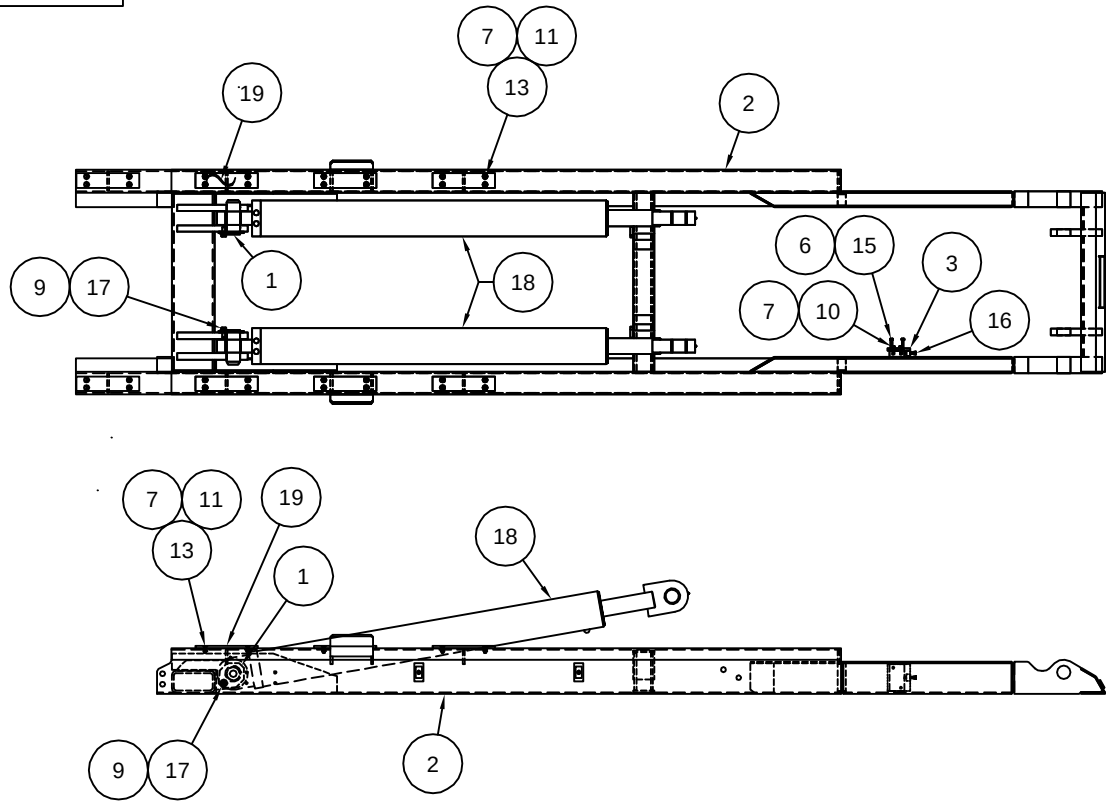
SWAPLOADER HOIST - BASE ASS'Y

SL-240

52H05 ~ REV B

PT-52H05.dwg 08/04/09 08:54

DISC-LOCK WASHER TORQUE SPEC'S	
BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400
NOTE: LUBRICATE BOLT THREADS BEFORE TORQUING THE ASSEMBLY	



PARTS LIST

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	2	50H13	MAINFRAME PIN WELDMENT	9.98	
2	ONE	51H84	MAINFRAME WELDMENT	799.96	
3	ONE	42H11	JIB LOCKOUT VALVE MOUNT	2.39	
4					
5					
6	2	00752	5/16ø LOCK WASHER	0.01	
7	26	00755	3/8ø LOCK WASHER	0.01	
8					
9	2	00P01	1/2-13 x 1 1/2 HHCS	0.13	GR-8
10	2	00P13	3/8-16 x 1 1/4 HHCS	0.06	GR-8
11	24	00P14	3/8-16 HEX NUT	0.02	GR-8
12					
13	24	00P68	3/8-16 x 1 1/4 FL HD SCR	0.03	SST
14					
15	2	01P08	5/16-18 x 2 HHCS	0.05	GR-8
16	ONE	01P20	3/8-16 x 1 3/4 SOC HD SCR	0.07	GR-8
17	2	01P30	1/2ø DISC-LOCK WASHER	0.02	
18	2	21P63	HYDRAULIC CYLINDER 6ø x 54	350.00	
19	6	90P71	12" WEAR BLOCK	0.71	
20					
				1528.60	TOTAL

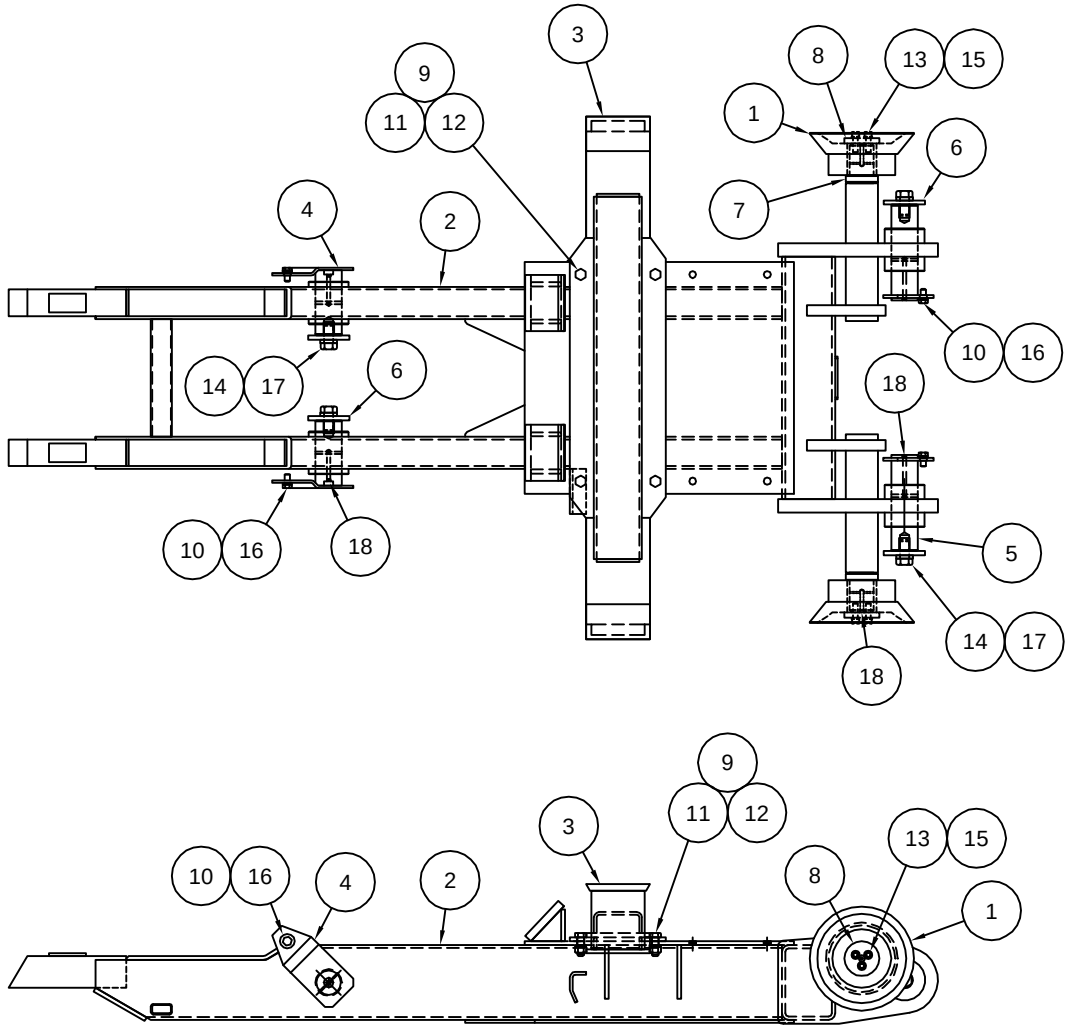
SWAPLOADER™ U.S.A. LTD.

MAINFRAME SUB-ASSEMBLY

SL-240

52H04 ~ REV A

PT-52H04.dwg 08/04/09 14:42



PARTS LIST

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	2	80P09	ROLLER ASS'Y	39.26	
2	ONE	51H79	PIVOT JOINT WELDMENT	516.24	
3	ONE	51H98	BODY LOCK WELDMENT	96.28	
4	2	51H88	PIVOT PIN WELDMENT	9.95	
5	2	51H89	MAIN PIVOT PIN WELDMENT	13.16	
6	4	61H93	PIVOT PIN CAP	0.95	
7	2	61H94	ROLLER SPACER	0.60	
8	2	85H21	ROLLER RETAINER	1.04	
9	4	00767	5/8ø LOCK WASHER	0.04	
10	4	00P09	1/2-13 x 1 HHCS	0.11	GR-8
11	4	00P24	5/8-11 HEX NUT	0.11	GR-8
12	4	00P91	5/8-11 x 1 3/4 HHCS	0.25	GR-8
13	6	01P25	7/16-14 x 1 1/2 SOC HD SCR	0.05	GR-8
14	4	01P27	7/8-9 x 1 3/4 HHCS	0.58	GR-8
15	6	01P29	7/16ø DISC-LOCK WASHER	0.02	
16	4	01P30	1/2ø DISC-LOCK WASHER	0.02	
17	4	01P33	7/8ø DISC-LOCK WASHER	0.07	
18	6	90P03	1/8 NPT ZERK STR	0.01	
				749.54	TOTAL

DISC-LOCK WASHER TORQUE SPEC'S	
BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400

NOTE:
LUBRICATE BOLT THREADS BEFORE TORQUING THE ASSEMBLY

SWAPLOADER™ U.S.A. LTD.

PIVOT JOINT SUB-ASSEMBLY

SL-240

52H03 ~ REV B

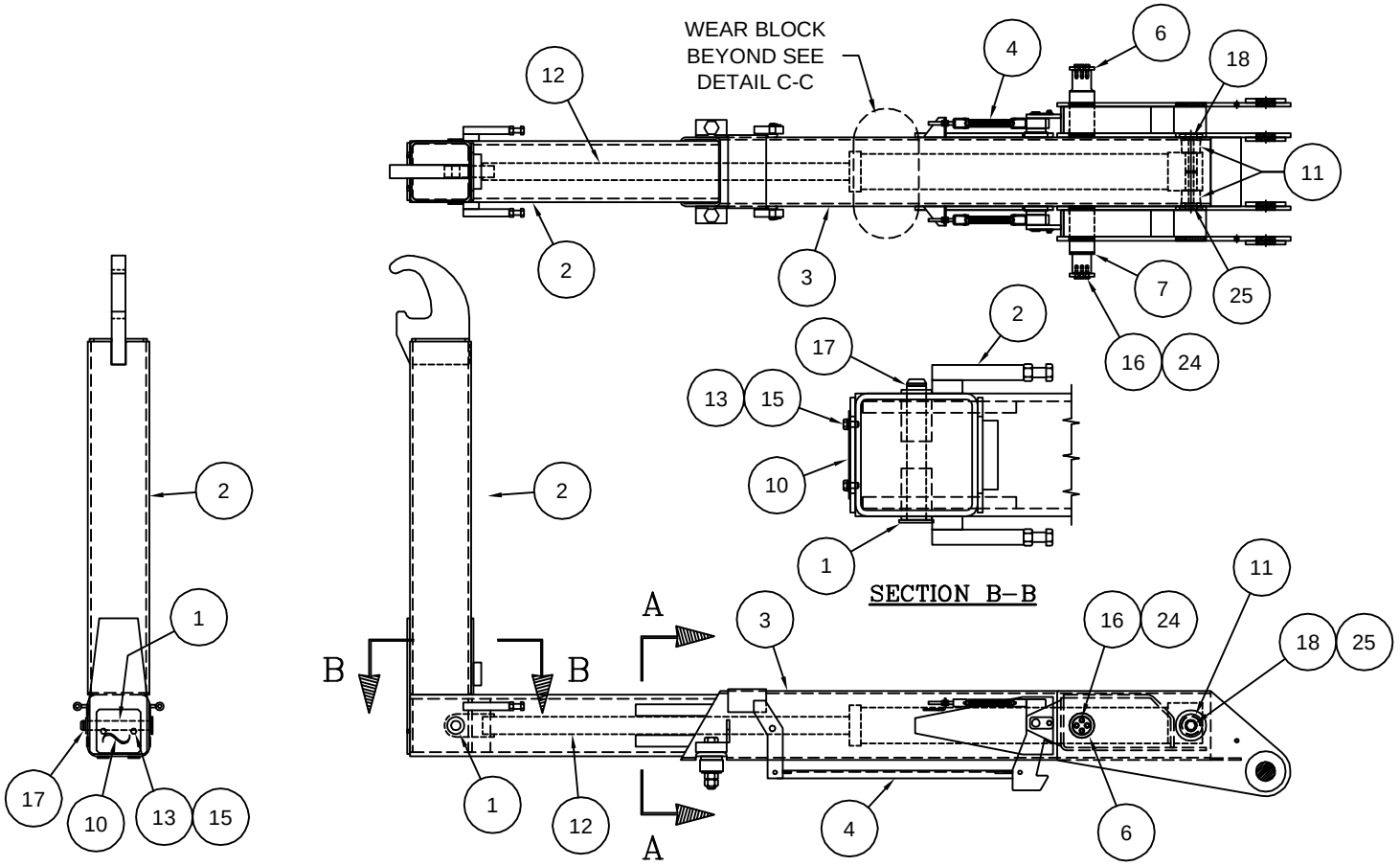
PT-52H03.dwg 08/05/09 15:12

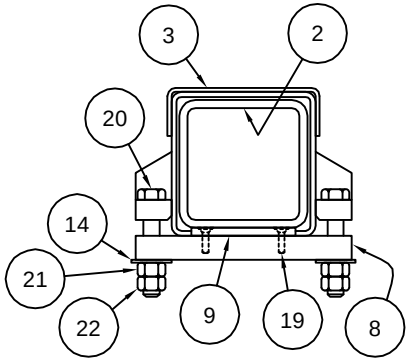
DISC-LOCK WASHER TORQUE SPEC'S	
BOLT SIZE	SAE GR 8 ASS'Y TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400

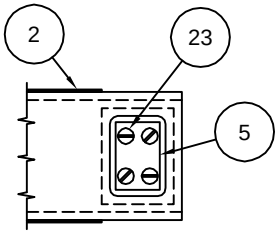
NOTE:
LUBRICATE BOLT THREADS BEFORE TORQUING THE ASSEMBLY

PARTS LIST

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	50H02	1 1/4ø CYLINDER PIN WDMT	3.53	
2	ONE	51H74	JIB WELDMENT	569.71	
3	ONE	51H76	OUTER TUBE WELDMENT	495.65	
4	ONE	52H01	SAFETY LATCH ASSEMBLY	59.34	
5	ONE	60H11	WEAR BLOCK	0.26	
6	2	60H28	CYLIINDER RETAINER	0.78	
7	2	60H29	SPACER	0.15	
8	ONE	60H30	CLAMP BAR	16.30	
9	ONE	60H31	CLAMP LINER	0.39	
10	ONE	62H11	COVER PLATE	1.13	
11	2	63H15	CYLINDER PIN TUBE	3.95	
12	ONE	21P67	HYD CYLINDER 3 1/2ø x 30	133.00	
13	2	00755	3/8ø LOCK WASHER	0.05	
14	2	00787	1ø FLAT WASHER HT	0.13	F-436
15	2	00P03	3/8-16 x 3/4 HHCS	0.04	GR-8
16	8	00P13	3/8-16 x 1 1/4 HHCS	0.06	GR-8
17	ONE	00P46	EXT RET RING FOR 1 1/4ø	-	
18	ONE	00P55	5/8-11 LOCKING HEX NUT	0.11	GR-C
19	4	00P58	3/8-16 x 1 1/2 FL HD SCR	0.04	BRASS
20	2	00P59	1-8 x 6 HHCS	1.76	GR-8
21	2	00P60	1-8 HEX NUT	0.29	GR-8
22	2	00P67	1-8 LOCKING HEX NUT	0.29	GR-C
23	4	00P79	3/8-16 x 3/4 FL HD SCR	0.01	BRASS
24	8	01P28	3/8ø DISC-LOCK WASHER	0.01	
25	ONE	01P35	5/8-11 x 9 HHCS	0.11	GR-8
26					
				1295.17	TOTAL







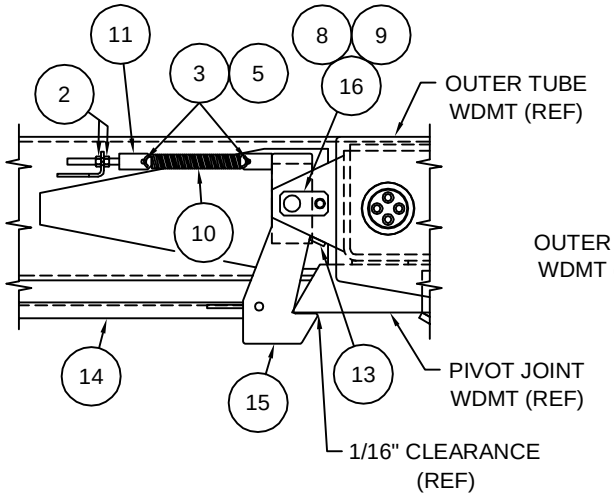
SWAPLOADER™ U.S.A. LTD.

TELESCOPIC JIB SUB-ASSEMBLY

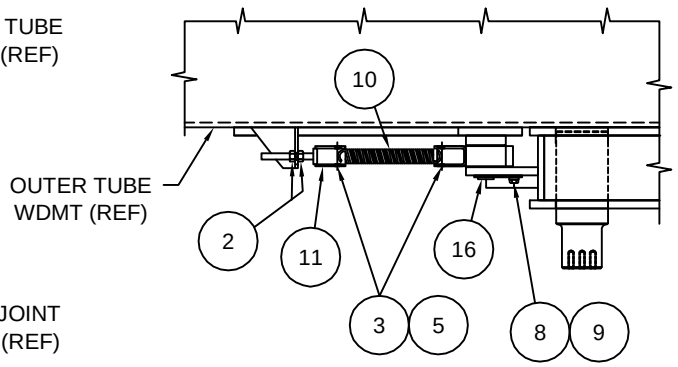
SL-240

51H99 ~ REV A

PT-51H99.dwg 08/07/09 15:04

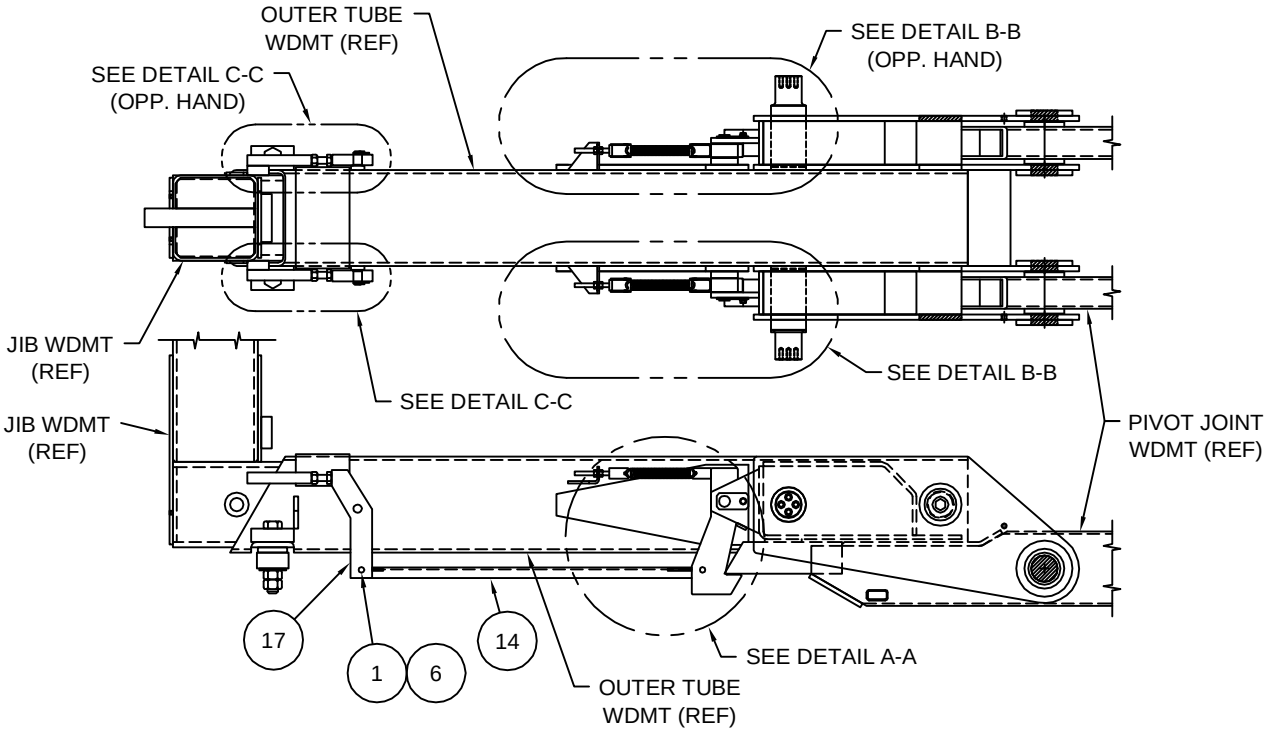


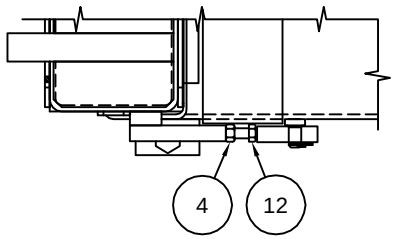
DETAIL A–A



DETAIL B–B

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT–lb/ea	REMARKS
1	4	00772	1/2ø FLAT WASHER	0.07	
2	4	00P14	3/8–16 HEX NUT	0.10	GR–8
3	4	00P23	1/4ø x 1 3/4 CLEVIS PIN	0.03	
4	2	00P24	5/8–11 HEX NUT	0.18	GR–8
5	4	00P25	1/16ø x 3/4 COTTER PIN	–	
6	4	00P26	1/8ø x 1 COTTER PIN	0.01	
7	2	00P28	EXT. RETAINER RING FOR 3/4ø	0.01	
8	2	00P49	5/16–18 x 1/2 HHCS	0.09	GR–8
9	2	00752	5/16ø LOCK WASHER	0.04	
10	2	90P04	7/8ø x 6 SPRING	0.38	
11	2	10H35	TAKE UP WELDMENT	0.25	
12	2	00P85	5/8–11 x 3 1/2 HHCS	0.46	GR–8
13	2	20H93	LATCH STOP	0.10	
14	ONE	52H02	CONNECTION BAR WELDMENT	17.60	
15	2	50H18	SAFETY LATCH WELDMENT	12.30	
16	2	50H19	LATCH PIN WELDMENT	0.76	
17	2	60H89	RELEASE LEVER	5.88	
18					
				59.34	TOTAL





DETAIL C–C

SWAPLOADER™ U.S.A. LTD.

SAFETY LATCH ASSEMBLY

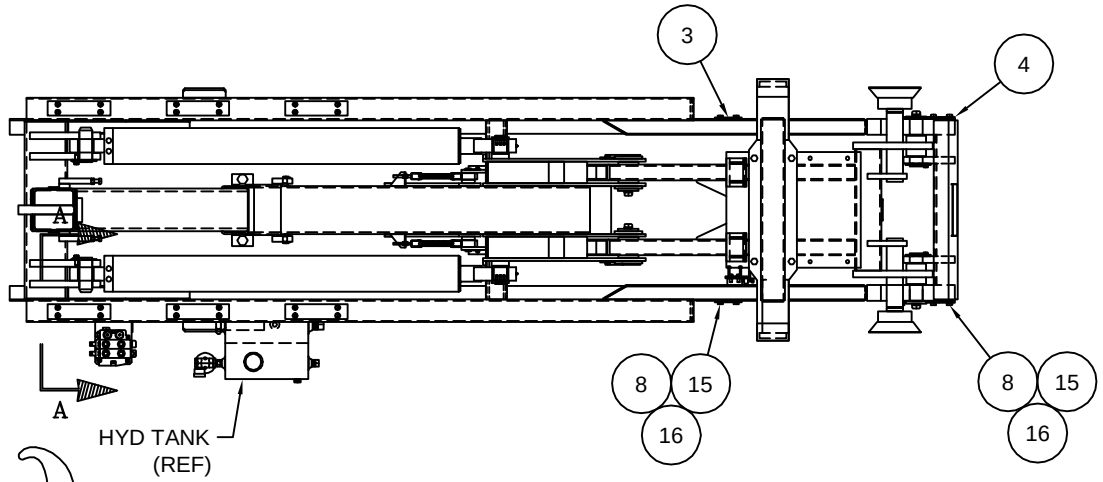
SL-240

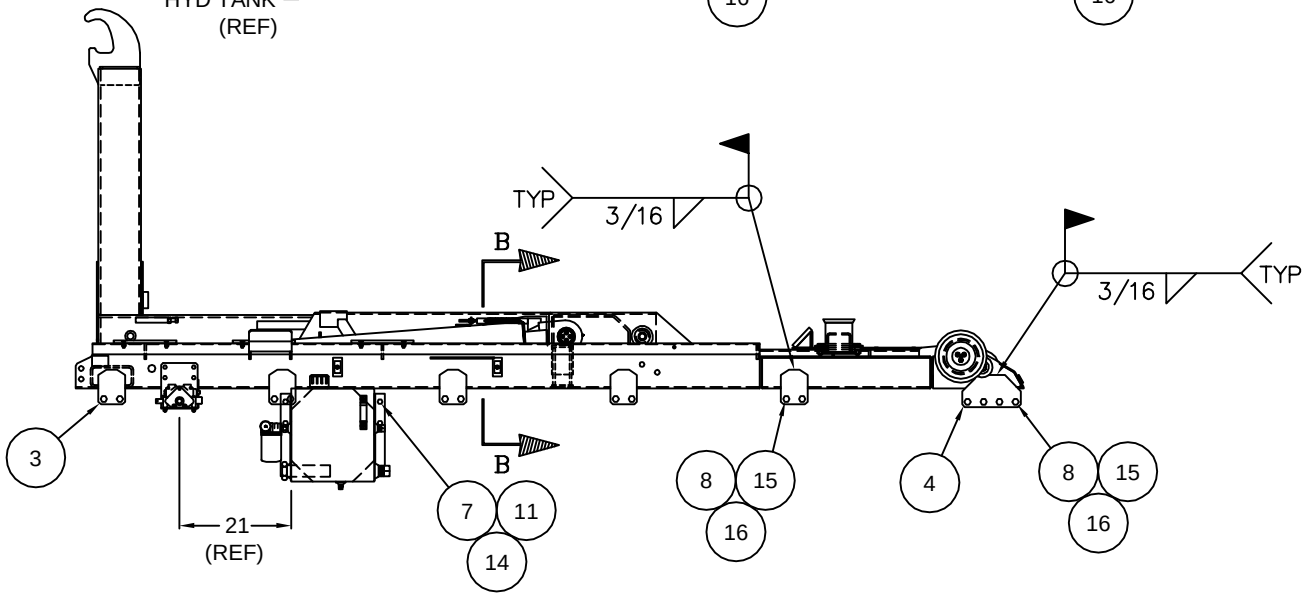
52H01 ~ REV A

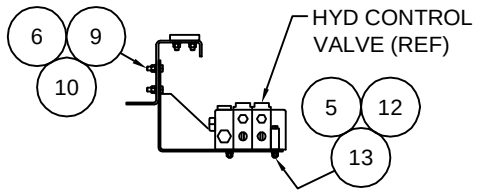
PT–52H01.dwg 08/11/09 12:36

PARTS LIST

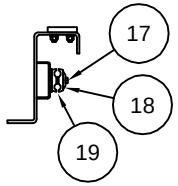
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	52H06	DECAL ASSEMBLY	–	NOT SHOWN
2	ONE	52H07	PARTS & OPERATIONS MANUAL	–	NOT SHOWN
3	10	60H60	FRONT BRACKET	2.67	
4	2	60H61	REAR BRACKET	4.91	
5	3	00752	5/16ø LOCK WASHER	0.01	
6	4	00755	3/8ø LOCK WASHER	0.01	
7	4	00784	1/2ø FLAT WASHER H.T.	0.02	F-436
8	28	00785	5/8ø FLAT WASHER H.T.	0.04	F-436
9	4	00P13	3/8-16 x 1 1/4 HHCS	0.06	GR-8
10	4	00P14	3/8-16 HEX NUT	0.02	GR-8
11	4	00P15	1/2-13 x 1 3/4 HHCS	0.15	GR-8
12	3	00P19	5/16-18 x 2 3/4 HHCS	0.06	GR-8
13	3	00P20	5/16-18 HEX NUT	0.01	GR-8
14	4	00P35	1/2-13 LOCKING HEX NUT	0.06	GR-C
15	28	00P55	5/8-11 LOCKING HEX NUT	0.11	GR-C
16	28	00P69	5/8-11 x 2 HHCS	0.27	GR-8
17	2	10P28	HEX BOLT 5/16ø x 1 1/4	0.03	HEX-T2
18	2	10P29	COVER PLATE	0.10	TCP-T2
19	2	10P66	CLAMP HALF ASSEMBLY	0.04	T2062
				50.14	TOTAL







SECTION A-A



SECTION B-B

SWAPLOADER™ U.S.A. LTD.

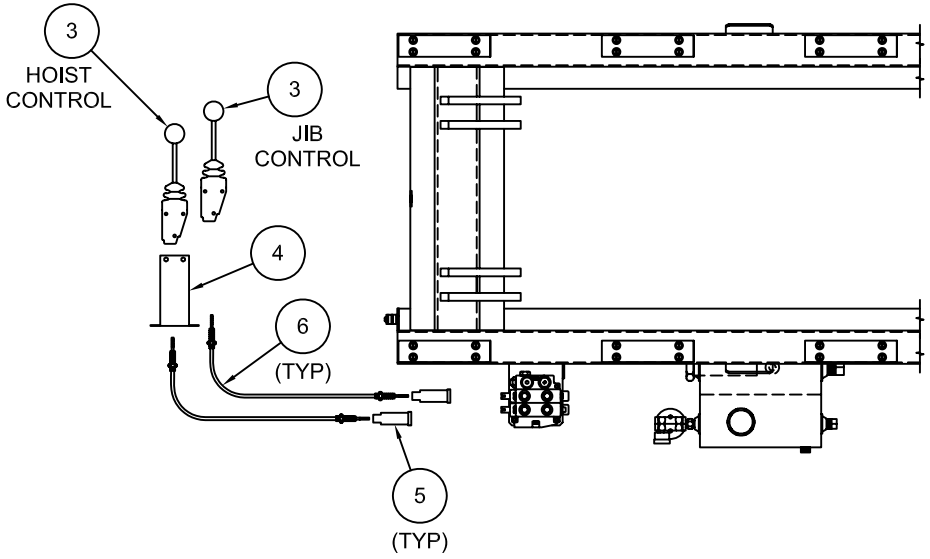
HOIST INSTALLATION KIT ASS'Y

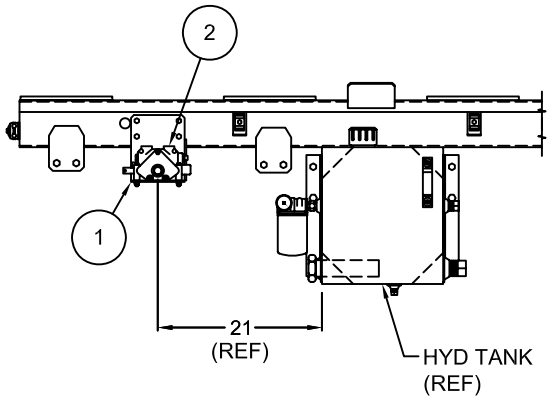
SL-240

52H34

PT-52H34.dwg 08/12/09 14:41

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	10H51	VALVE MOUNT BRACKET WDMT	8.24	
2	ONE	20P39	HYD VALVE ASS'Y	27.00	
3	2	20P08	REMOTE VALVE CONTROL HANDLE	2.80	
4	ONE	20P09	CONTROL HANDLE MOUNT CONSOLE	4.05	
5	2	20P10	BONNET CONNECTION KIT	0.50	
6	2	20P15	CONTROL CABLE 84" LG	1.75	
				49.39	TOTAL





NOTE:
A 2 SECTION CONTROL VALVE ASS'Y IS SHOWN. A 3 SECTION CONTROL VALVE ASS'Y IS REQUIRED WHEN A STABILIZER IS UTILIZED

SWAPLOADER™ U.S.A. LTD.

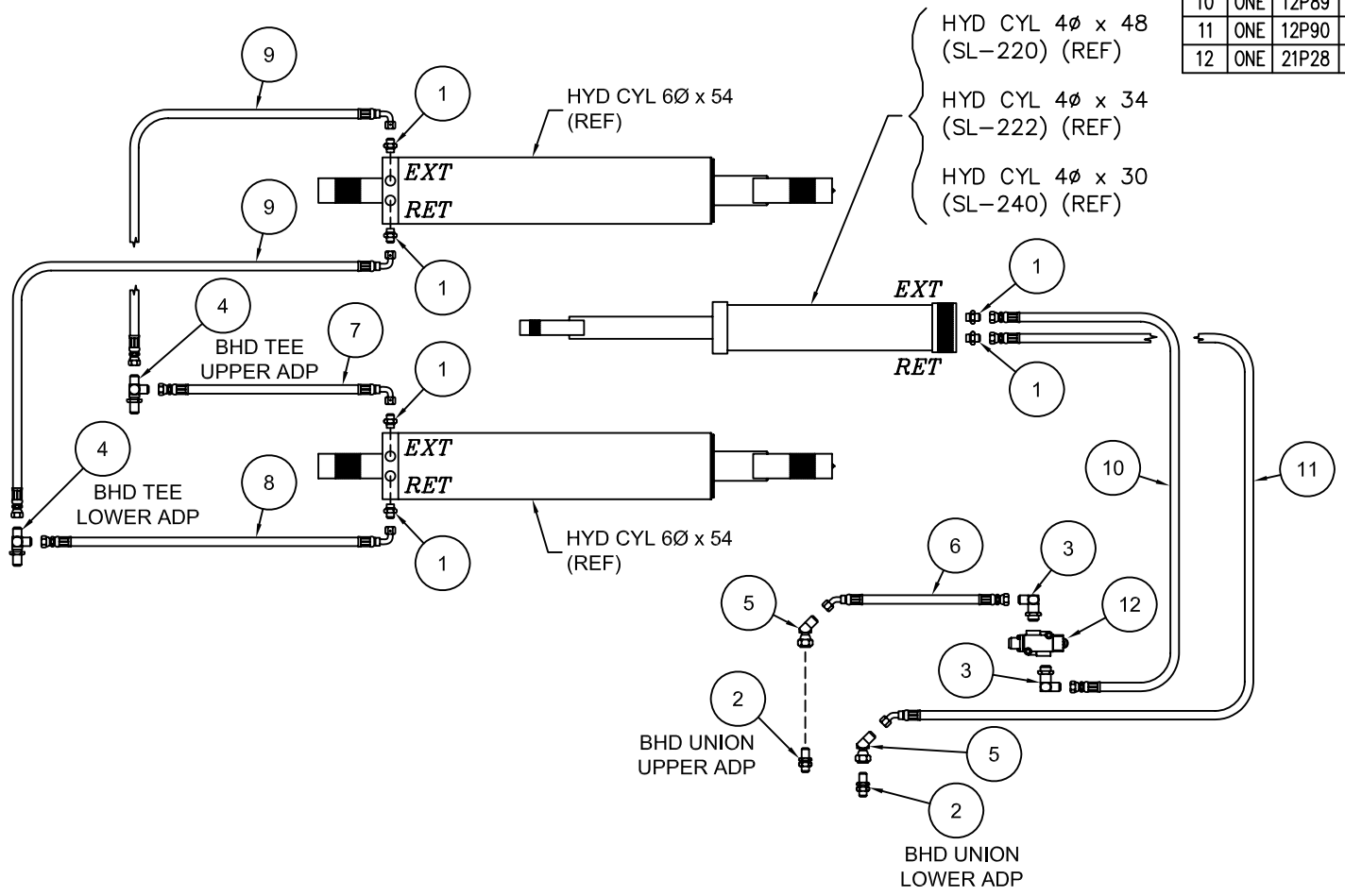
MANUAL CONTROL ASS'Y - 2 SECTION

SL-240/2418

90H64 ~ REV A

PT-90H64.dwg 09/01/09 09:58

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	6	10P39	ADP, HYD MJIC / ORB	0.30	6400-8
2	2	11P02	ADP, HYD MJIC BHD	0.40	2700-LN-10
3	2	11P23	ADP, HYD MJIC / ORB 90°	0.30	6801-8
4	2	11P27	ADP, HYD MJIC BHD TEE	0.40	2704-LN-10
5	ONE	12P09	ADP, HYD FMJIC SVL / MJIC 45°	0.30	6502-10
6	ONE	12P76	HOSE ASS'Y 1/2 HP x 31 1/2	1.65	
7	ONE	12P86	HOSE ASS'Y 1/2 HP x 20	1.23	
8	ONE	12P87	HOSE ASS'Y 1/2 HP x 21	1.26	
9	2	12P88	HOSE ASS'Y 1/2 HP x 47	2.24	
10	ONE	12P89	HOSE ASS'Y 1/2 HP x 102	4.32	
11	ONE	12P90	HOSE ASS'Y 1/2 HP x 131	5.38	
12	ONE	21P28	HYDRAULIC VALVE	2.20	
				25.12	TOTAL



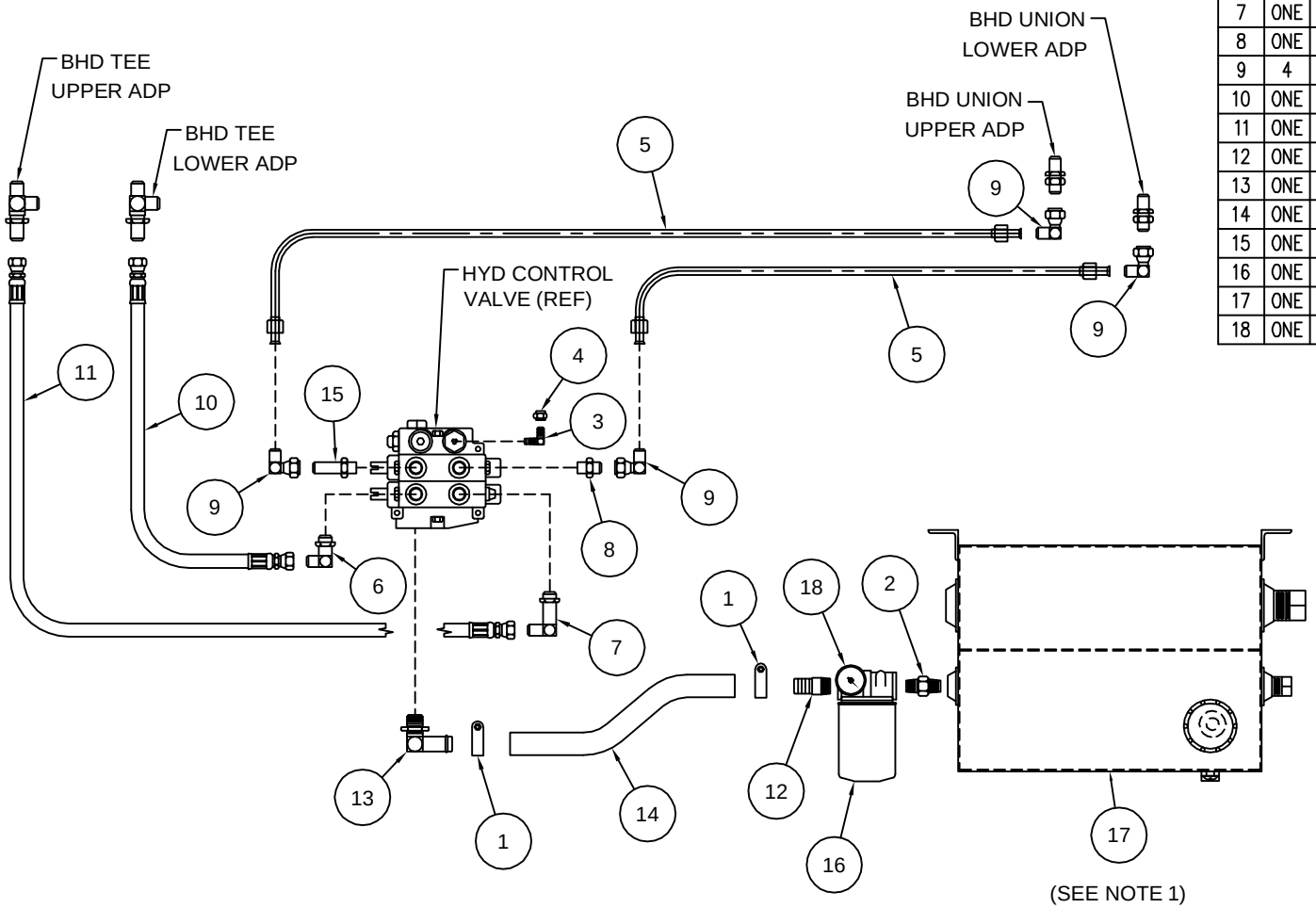
SWAPLOADER™ U.S.A. LTD.

HYD. SUB-ASS'Y - BASE CYLINDER CIRCUIT

SL-220/222/240

90H96

PT-90H96.dwg 09/01/09 10:06



PARTS LIST

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	2	10P21	T-BOLT CLAMP, 1 1/2ø	0.10	TBC-150
2	ONE	10P26	ADP, HYD MP / MP	0.70	5404-20-16
3	ONE	10P37	ADP, HYD MJIC / MP 90°	0.30	2501-4-4
4	ONE	10P38	ADP, HYD JIC CAP	0.10	304-C-4
5	2	10P73	HYD TUBING - REAR TO VALVE	3.62	
6	ONE	11P04	ADP, HYD MJIC / ORB 90°	0.40	6801-10
7	ONE	11P05	ADP, HYD MJIC / ORB LL 90°	0.40	6801-LL-10
8	ONE	11P06	ADP, HYD MJIC / ORB	0.40	6400-10
9	4	11P07	ADP, HYD MJIC / FMJIC SVL 90°	0.40	6500-10
10	ONE	11P98	HOSE ASS'Y 1/2 HP x 28	1.37	
11	ONE	11P99	HOSE ASS'Y 1/2 HP x 33	1.52	
12	ONE	12P19	ADP, HYD HOSE INS / MP	0.30	ST10
13	ONE	12P26	ADP, HYD HOSE INS / ORB 90°	0.60	4601-16-12
14	ONE	12P31	HOSE 1 LP x 30	1.65	
15	ONE	12P61	ADP, HYD MJIC / ORB L	0.40	6400-L-10
16	ONE	20P22	HYDRAULIC FILTER	2.30	
17	ONE	20P25	HYDRAULIC TANK - 25 GAL	63.00	SEE NOTE
18	ONE	20P64	INDICATOR GAUGE	0.01	
				78.87	TOTAL

NOTE:
HYD TANK ASS'Y CONSISTS OF:
TANK WELDMENT, TANK MOUNTED STRAINER,
SIGHT GAUGE, FILLER/BREATHER CAP,
MAGNETIC DRAIN PLUG, AND PORT PLUGS.

SWAPLOADER™ U.S.A. LTD.

HYD. SUB-ASS'Y - CHASSIS TANK CIRCUIT

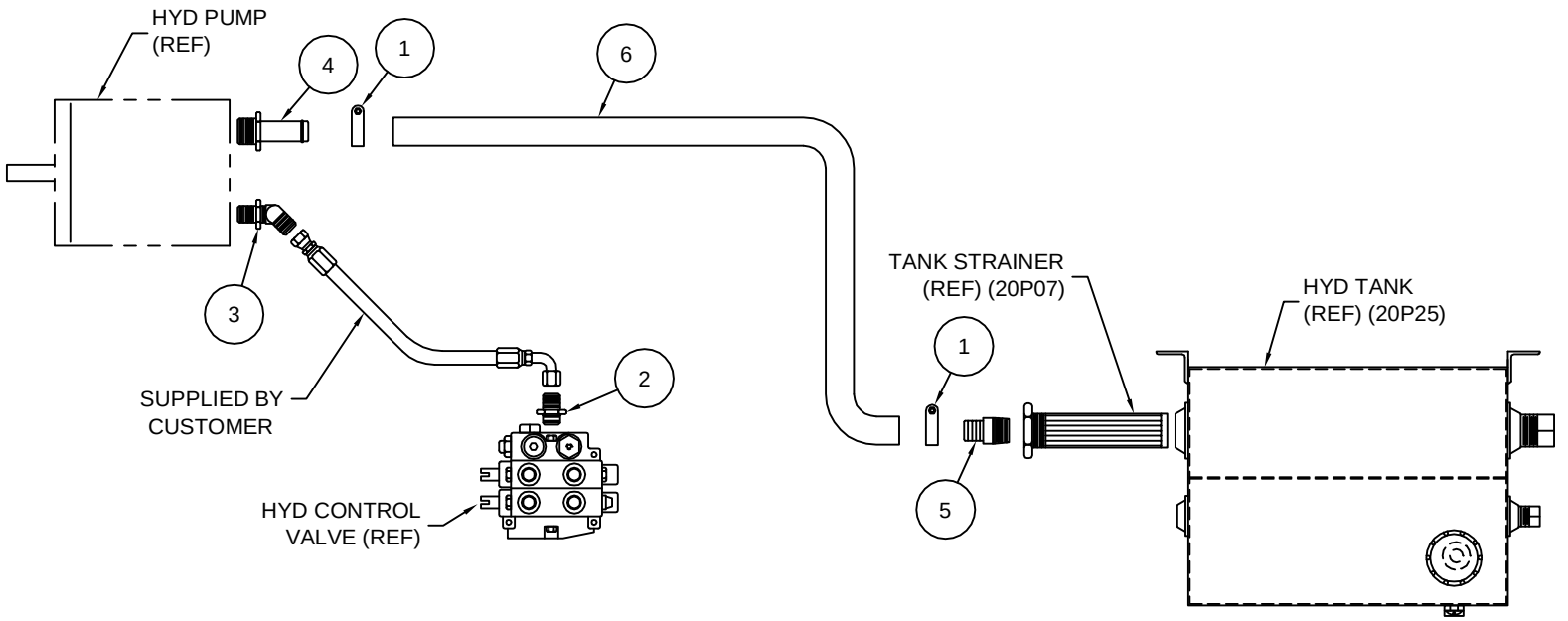
SL-220/222/240

90H97

PT-90H97.dwg 08/20/09 10:30

PARTS LIST

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	2	10P78	1 3/4ø T-BOLT CLAMP	0.15	TBC-175
2	ONE	10P90	ADP, HYD MJIC / ORB	0.40	6400-12
3	ONE	10P91	ADP, HYD MJIC / ORB 45°	0.50	6802-12-16
4	ONE	12P24	ADP, HYD HOSE INS / ORB	0.60	4604-20
5	ONE	12P25	ADP, HYD HOSE INS / MP	0.60	ST15
6	ONE	12P30	HOSE 1 1/4 LP x 148	9.74	
				12.14	TOTAL



NOTE:
DRIVER SIDE INSTALLATION OF HYDRAULIC TANK SHOWN. FOR SHORT WHEELBASE CHASSIS PLUMBING FOR HYDRAULIC TANK CAN BE ROUTED FOR PASSENGER SIDE INSTALLATION.

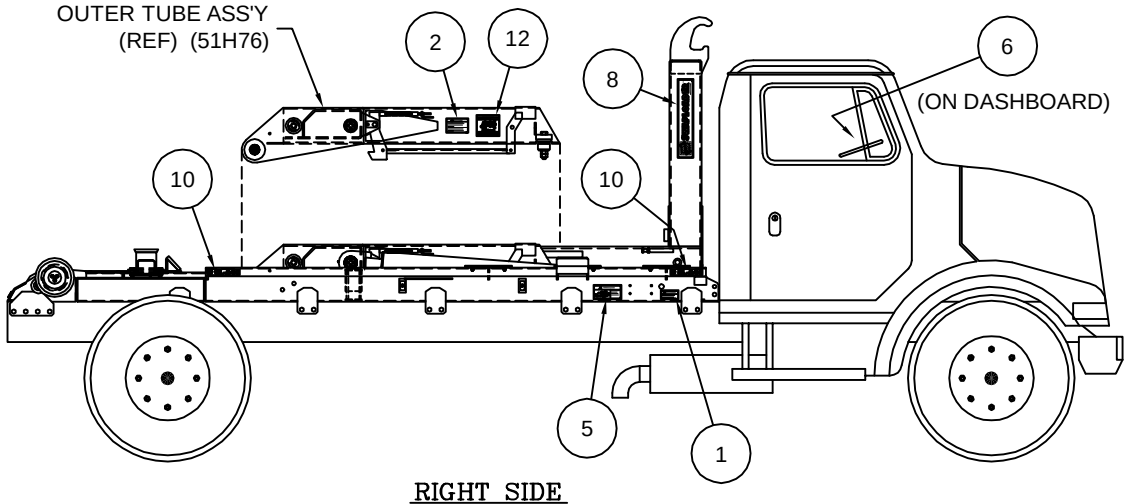
SWAPLOADER™ U.S.A. LTD.

HYD. SUB-ASS'Y - PUMP CIRCUIT

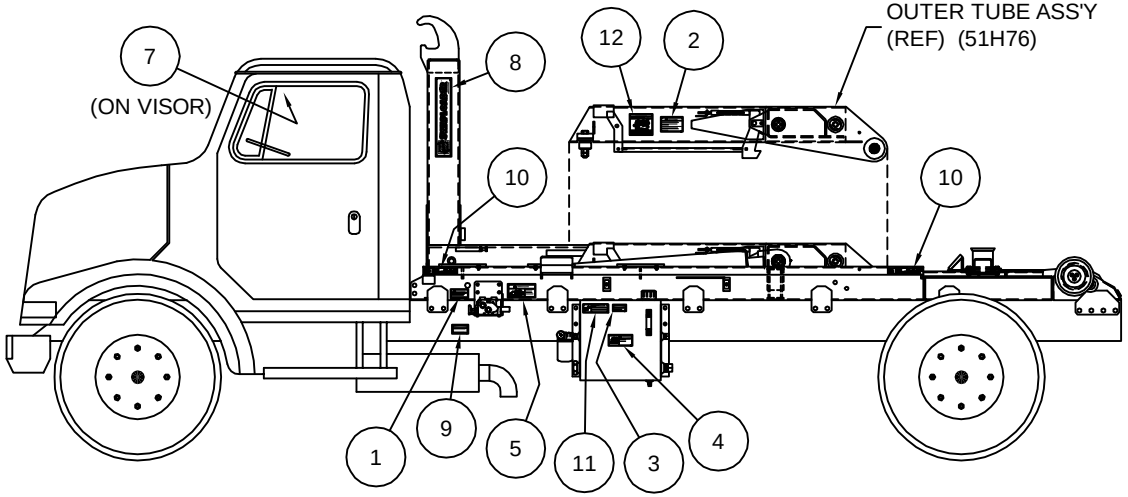
SL-220/222/240/2418

90H98

PT-90H98.dwg 08/21/09 15:29



RIGHT SIDE



LEFT SIDE

PARTS LIST					
ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	2	90P07	OPR & SERV MANUAL		
2	2	90P08	HOIST-BODY SPEC		
3	ONE	90P09	HYD OIL SPEC		
4	ONE	90P10	HYD OIL FLAMMABLE		
5	2	90P11	HOIST FALLING		
6	ONE	90P12	LEVER CONTROL		
7	ONE	90P13	SAFETY INSTRUCTIONS		
8	2	90P14	SWAPLOADER - JIB		
9	ONE	90P18	RELIEF VALVE		
10	4	90P75	SL-240		
11	ONE	90P78	HIGH-PRESSURE FLUID		
12	2	91P06	LUBRICATION POINTS		
					TOTAL

SWAPLOADER™ U.S.A. LTD.

DECAL ASSEMBLY

SL-240

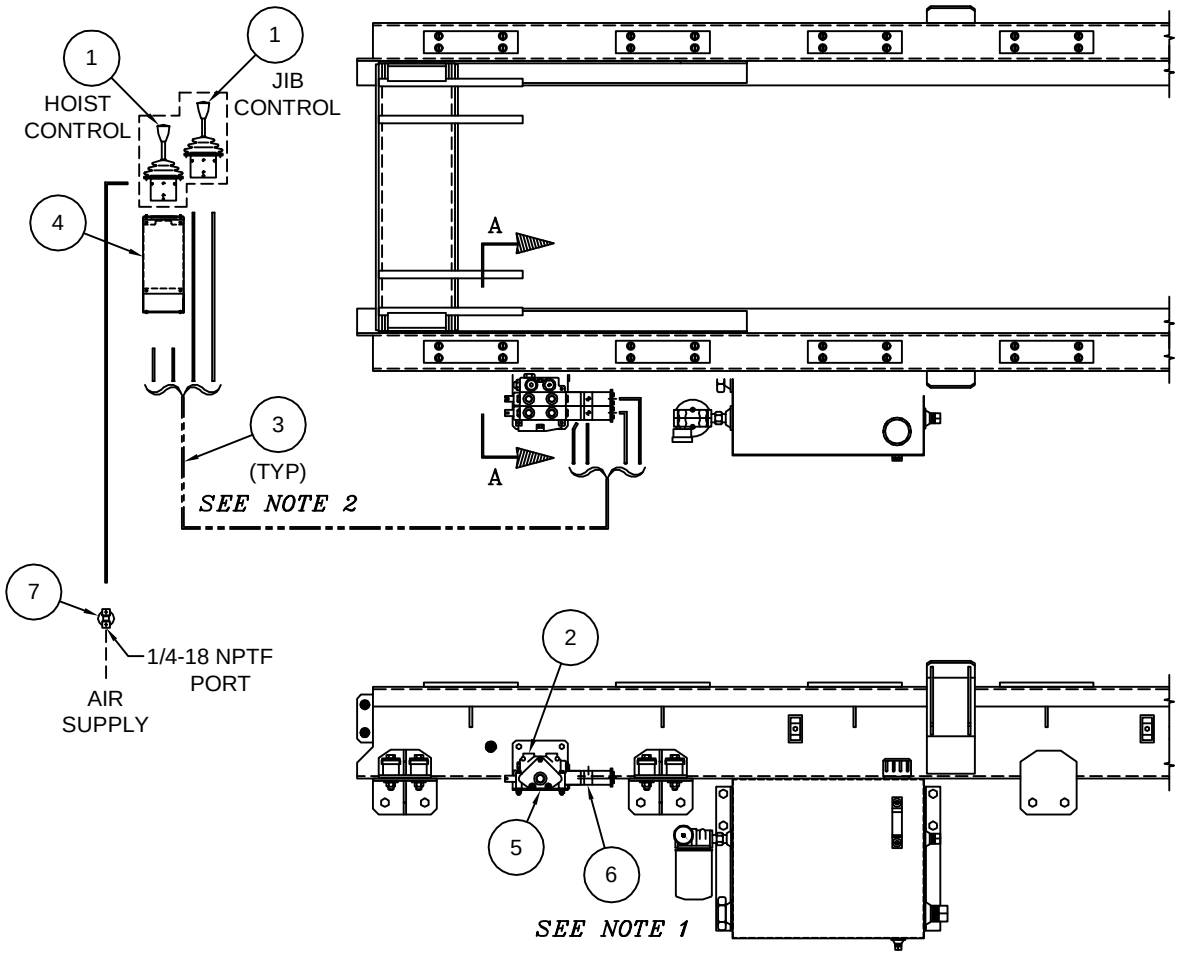
52H06 ~ REV B

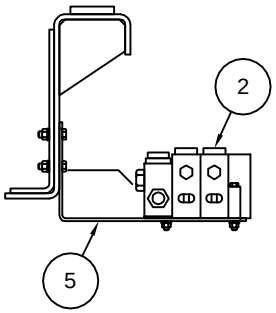
PT-52H06.dwg 08/25/09 11:03

OPTIONS

PARTS LIST

ITEM	QTY	P/N	DESCRIPTION	WT-lb/ea	REMARKS
1	ONE	20P72	CONTROL HANDLE ASS'Y	1.60	
2	ONE	20P39	HYD CONTROL VALVE ASS'Y	27.00	
3	ONE	12P94	AIR LINE KIT	1.40	
4	ONE	51H27	AIR CONTROL CONSOLE ASS'Y	6.23	
5	ONE	10H51	VALVE MOUNT BRACKET	8.24	
6	2	20P95	HYD VALVE SECTION AIR SHIFT KIT	1.42	
7	ONE	20P74	AIR PRESSURE PROTECTION VALVE	0.59	WM778A
				47.90	TOTAL





SECTION A-A

NOTE:

1. 20P95 AIR SHIFT KIT TO BE INSTALLED ON HYD CONTROL VALVE BY HOIST INSTALLER. REFERENCE INSTALLATION INSTRUCTIONS INCLUDED WITH THE AIR SHIFT KIT.
2. SEE DRAWING 90H60 FOR AIR SHIFT KIT PLUMBING DIAGRAM.

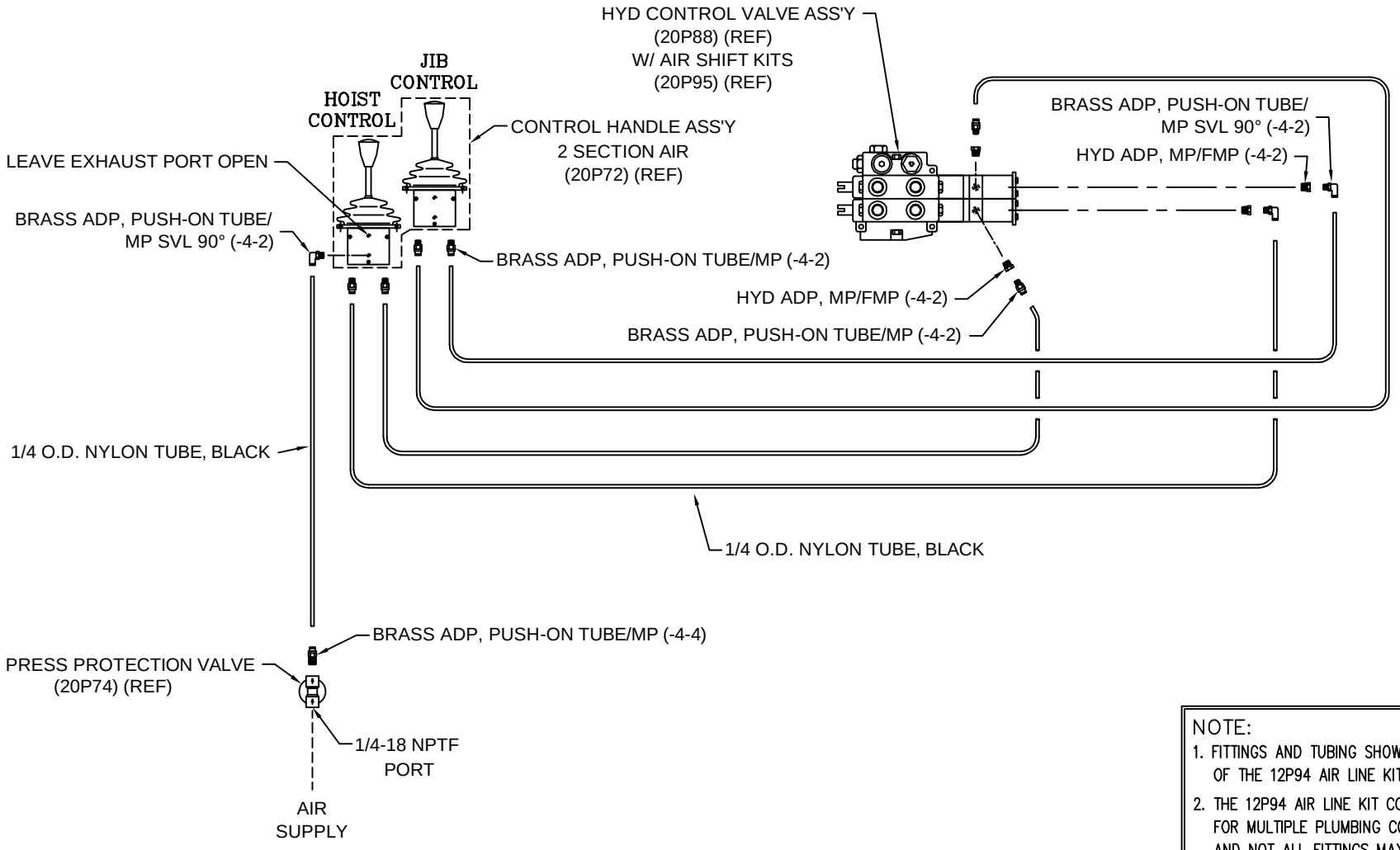
SWAPLOADER™ U.S.A. LTD.

AIR CONTROL ASS'Y - 2 SECTION

SL-220/222/240/2418

90H61 ~ REV B

PT-90H61.dwg 08/26/09 15:08



NOTE:

1. FITTINGS AND TUBING SHOWN ARE PART OF THE 12P94 AIR LINE KIT.
2. THE 12P94 AIR LINE KIT CONTAINS FITTINGS FOR MULTIPLE PLUMBING CONFIGURATIONS AND NOT ALL FITTINGS MAY BE UTILIZED.

SWAPLOADER™ U.S.A. LTD.

AIR CIRCUIT, CONTROL VALVE - 2 SECTION

SL-330/400/406

90H60 ~ REV A

PT-90H60.dwg 07/16/09 15:28

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